SHARP

# LC-42XL2E
# LC-42XL2S
# LC-46XL2E
# LC-46XL2S
# LC-52XL2E
# LC-52XL2S

**LCD COLOUR TELEVISION**
**LCD-FARBFERNSEHGERÄT**
**TÉLÉVISEUR COULEUR À ÉCRAN CRISTAUX LIQUIDES (LCD)**
**TELEVISORE A COLORI LCD**
**LCD-KLEURENTELEVISIE**
**TELEVISIÓN EN COLOR LCD**

ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO
NEDERLANDS
ESPAÑOL

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUALE DI ISTRUZIONI
GEBRUIKSAANWIJZING
MANUAL DE MANEJO

AQUOS

HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE
DVB Digital Video Broadcasting
HD ready 1080p
DOLBY DIGITAL
SRS TruSurround XT
100Hz DOUBLE FRAME DRIVING

**SPECIAL NOTE FOR USERS IN THE U.K.**

The mains lead of this product is fitted with a non-rewireable (moulded) plug incorporating a 13A fuse. Should the fuse need to be replaced, a BSI or ASTA approved BS 1362 fuse marked ♆ or ◈ and of the same rating as above, which is also indicated on the pin face of the plug, must be used.
Always refit the fuse cover after replacing the fuse. Never use the plug without the fuse cover fitted.
In the unlikely event of the socket outlet in your home not being compatible with the plug supplied, cut off the mains plug and fit an appropriate type.

**DANGER:**
The fuse from the cut-off plug should be removed and the cut-off plug destroyed immediately and disposed of in a safe manner.
Under no circumstances should the cut-off plug be inserted elsewhere into a 13A socket outlet, as a serious electric shock may occur.
To fit an appropriate plug to the mains lead, follow the instructions below:

**IMPORTANT:**
The wires in the mains lead are coloured in accordance with the following code:

**Blue: Neutral**
**Brown: Live**

As the colours of the wires in the mains lead of this product may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
• The wire which is coloured blue must be connected to the plug terminal which is marked N or coloured black.
• The wire which is coloured brown must be connected to the plug terminal which is marked L or coloured red.
Ensure that neither the brown nor the blue wire is connected to the earth terminal in your three-pin plug.
Before replacing the plug cover make sure that:
• If the new fitted plug contains a fuse, its value is the same as that removed from the cut-off plug.
• The cord grip is clamped over the sheath of the mains lead, and not simply over the lead wires.
IF YOU HAVE ANY DOUBT, CONSULT A QUALIFIED ELECTRICIAN.

# OPERATION MANUAL

ENGLISH



- The illustrations and on-screen displays in this operation manual are for explanation purposes and may vary slightly from the actual operations.
- The examples used throughout this manual are based on the LC-42XL2E model.

# Contents


**Contents** ..... **1**
**Introduction** ..... **2**
Dear SHARP customer ..... 2
Important Safety Precautions ..... 2
Trademarks ..... 2
Remote control unit ..... 3
TV (Front view) ..... 4
TV (Rear view) ..... 4
**Preparation** ..... **5**
Supplied accessories ..... 5
Attaching the stand unit ..... 5
Inserting the batteries ..... 6
Using the remote control unit ..... 6
Cautions regarding the remote control unit ..... 6
**Quick guide** ..... **7**
Initial installation overview ..... 7
Before turning on the power ..... 8
Bundling the cables ..... 8
Initial auto installation ..... 9
Checking signal strength and channel strength ..... 9
**Watching TV** ..... **10**
Daily operation ..... 10
Switching on/off ..... 10
Switching between analogue and digital broadcasts ..... 10
Changing channels ..... 10
Selecting external video source ..... 10
Selecting Sound mode ..... 10
EPG (Electronic Programme Guide) ..... 11
EPG Overview ..... 11
Useful settings for using EPG ..... 11
Selecting a programme using EPG ..... 12
Timer recording using EPG ..... 13
Cancelling the timer recording ..... 13
Teletext ..... 14
Using the MHEG5 application (UK only) ..... 14
**Connecting external devices** ..... **15**
Introduction to connections ..... 15
HDMI connection ..... 16
Component connection ..... 16
S-VIDEO/VIDEO connection ..... 16
SCART connection ..... 17
Controlling devices with SCART using AV Link ..... 17
Speaker/amplifier connection ..... 18
Inserting a CA Card ..... 19
**AQUOS LINK** ..... **20**
Controlling HDMI devices using AQUOS LINK ..... 20
AQUOS LINK connection ..... 21
AQUOS LINK Setup ..... 21
Operating an AQUOS LINK device ..... 22
**Menu operation** ..... **23**
What is the Menu? ..... 23
Common operations ..... 23
**Basic adjustment** ..... **24**
Picture Settings ..... 24
AV Mode ..... 25
Audio Settings ..... 25
Power Save Settings ..... 25
Channel Settings ..... 26
Auto Installation ..... 26
Digital channel settings ..... 26
Analogue channel settings ..... 27
Password/Parental lock settings ..... 28
Language Settings (language, subtitle, multi audio) ..... 28
**Useful Viewing functions** ..... **29**
Selecting the WSS picture size automatically ..... 29
Selecting the WSS picture size manually ..... 29
Selecting the picture size manually ..... 29
Selecting the recording picture size manually ..... 30
Selecting the HDMI picture size automatically ..... 30
Other Picture and audio settings ..... 30
Adjusting image position ..... 30
Reducing noise on the screen ..... 30
Automatic volume adjustment ..... 30
Clear Voice ..... 30
Audio Only ..... 30
Display Settings ..... 31
Channel display ..... 31
Time and Title display ..... 31
**Other useful features** ..... **32**
Setting when using external devices ..... 32
Input source settings ..... 32
Skipping specified input ..... 32
Colour system settings ..... 32
Additional features ..... 32
**Connecting a PC** ..... **33**
Connecting a PC ..... 33
Displaying a PC image on the screen ..... 33
Selecting the picture size ..... 33
Adjusting the PC image automatically ..... 34
Adjusting the PC image manually ..... 34
Selecting input resolution ..... 34
RS-232C port specifications ..... 35
PC compatibility chart ..... 36
RS-232C command list ..... 36
**Appendix** ..... **37**
Troubleshooting ..... 37
Using the universal remote control ..... 38
Updating your TV via DVB-T ..... 42
Reset ..... 42
Identification ..... 42
Specifications ..... 43
Optional accessory ..... 43
End of life disposal ..... 44

# Introduction

## Dear SHARP customer

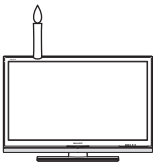
Thank you for your purchase of the SHARP LCD colour TV product. To ensure safety and many years of trouble-free operation of your product, please read the Important Safety Precautions carefully before using this product.

## Important Safety Precautions

- Cleaning—Unplug the AC cord from the AC outlet before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
- Water and moisture—Do not use the product near water, such as bathtub, washbasin, kitchen sink, laundry tub, swimming pool and in a wet basement.
- Do not place vases or any other water-filled containers on this product.
  The water may spill onto the product causing fire or electric shock.

- Stand—Do not place the product on an unstable cart, stand, tripod or table. Doing so can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer's instructions. Use only the mounting hardware recommended by the manufacturer.
- When relocating the product placed on a cart, it must be moved with utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.

- Ventilation—The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is dropped or impact applied. If the LCD panel is broken, be careful not to be injured by broken glass.
- Heat sources—Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).
- To prevent fire, never place any type of candle or naked flames on the top or near the TV set.
- To prevent fire or shock hazard, do not place the AC cord under the TV set or other heavy items.
- Do not display a still picture for a long time, as this could cause an afterimage to remain.
- There is power consumption always if main plug is connected.
- Servicing—Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified person to perform servicing.



The LCD panel is a very high technology product, giving you fine picture details.
Due to the very large number of pixels, occasionally a few non-active pixels may appear on the screen as a fixed point of blue, green or red.
This is within product specifications and does not constitute a fault.

### Precautions when transporting the TV

When transporting the TV, never carry it by holding onto the speakers. Be sure to always carry the TV by two people holding it with two hands — one hand on each side of the TV.

**WARNING:**
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## Trademarks

- "HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC."

DOLBY DIGITAL

- Manufactured under license from Dolby Laboratories.
- "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

- TruSurround XT, SRS and (●) symbol are trademarks of SRS Labs, Inc.

- The "HD ready 1080P" Logo is a trademark of EICTA.

- The DVB logo is the registered trademark of the Digital Video Broadcasting - DVB - project.

# Remote control unit

**NOTE**
- The symbols DVD, STB and VCR indicate that the buttons become available in respective operating mode when using as a universal remote control.

**1 TV ⏻ | (TV Standby/On)** (Page 10)

**2 LIGHT** DVD STB VCR
When pressed, buttons that are frequently used (**P** ∧/∨, ◿ +/−, **0 - 9** numeric buttons, ⮌ and ⮕) will light. The lighting will turn off if no operations are performed within about 5 seconds. This button is used for performing operations in low-light situations.

**3 FUNCTION** DVD STB VCR
Press this button briefly (for more than 0.2 second), and the remote control switches for DVD, SetTopBox or VCR operation and currently controlled devices will be indicated in the LCD window.
See page 38 for how to use this unit as a universal remote control.

**4 LCD window** DVD STB VCR
This screen shows which device you are currently controlling. (TV, DVD, STB or VCR)

**5 0 - 9 numeric buttons** STB
Set the channel.
Enter desired numbers.
Set the page in teletext mode.

**6 ⮌ (Flashback)**
Press to return to the previous image in normal viewing mode.

**7 ATV**
Press to access conventional analogue TV mode.

**8 DTV**
Press to access DTV mode.

**9 ◿ (+/−) (Volume)**
Increase/decrease TV volume.

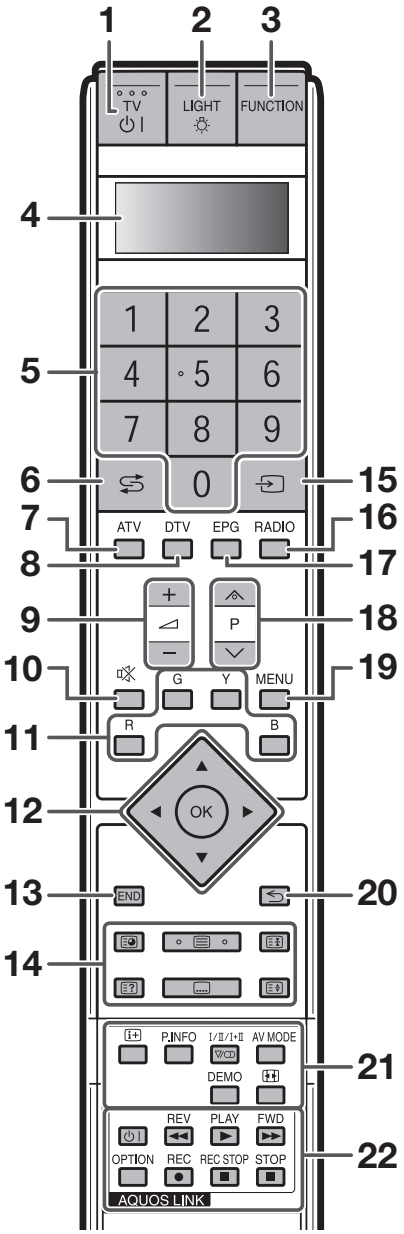
**10 (Mute)**
TV sound on/off.

**11 R/G/Y/B (Colour) buttons**
On the menu screen, the coloured buttons are correspondingly used to select the coloured items on the screen. (e.g. EPG, MHEG-5, TELETEXT)

**12 ▲/▼/◀/▶ (Cursor)** DVD
Select a desired item on the setting screen.

**OK** DVD STB
ATV/DTV/DVD/STB: Execute a command within the menu screen.
ATV/DTV: Display the programme list when no other menu screen is running.

**13 END**
Exit the menu screen.




**14 Buttons for useful operations**

**(Subpage)** (Page14)

**(Teletext)**
ATV: Display analogue teletext. (Page 14)
DTV: Select MHEG-5 and teletext for DTV. (Page 14)

**(Freeze/Hold)**
Press to freeze a moving image on the screen.
TELETEXT: Stop updating Teletext pages automatically or release the hold mode.

**(Reveal hidden Teletext)** (Page 14)

**(Subtitle)**
ATV/DTV/External: Switch subtitle languages on/off. (Pages 14 and 28)

**(Top/Bottom/Full)**
Set the area of magnification in teletext mode. (Page 14)

**15 ⮕ (INPUT SOURCE)**
Select an input source. (TV, EXT1, EXT2, EXT3, EXT4, EXT5, EXT6, EXT7, EXT8) (Page 10)

**16 RADIO**
DTV: Switch between Radio and Data mode.
- When only data broadcasting (no radio broadcasting) is transmitted by DVB, the radio broadcasting will be skipped.

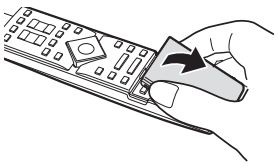
**17 EPG**
DTV: Display the EPG screen. (Pages 11 - 13)

**18 P (∧/∨)** DVD STB VCR
Select the TV channel.
In analogue TV mode, external sources can also be selected.

**19 MENU** DVD
ATV/DTV: Menu screen on/off.
DVD: Title menu on/off.

**20 ⮌ (Return)**
Return to the previous menu screen.

**21 Buttons for other useful features**
Flip open the remote control cover on the front.



**(Display information)**
Press to display the station information (channel number, signal, etc.) in the upper right corner of the screen. (Page 31)

**P. INFO**
Press to display programme information which is transmitted through digital video broadcasting in the upper left corner of the screen. (DTV only)

**(Sound mode)**
Select the sound multiplex mode. (Page 10)

**AV MODE**
Select a video setting. (Page 25)

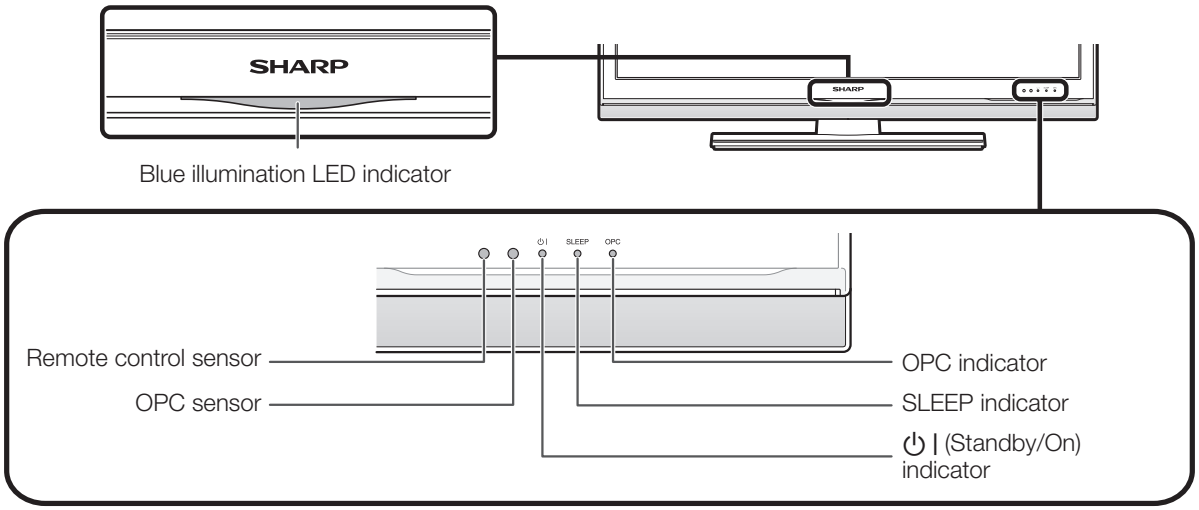
**DEMO**
Demonstrate the 100 Hz effects in a dual screen format. (Page 24)

**(WIDE MODE)**
Select the wide mode. (Pages 29 and 33)

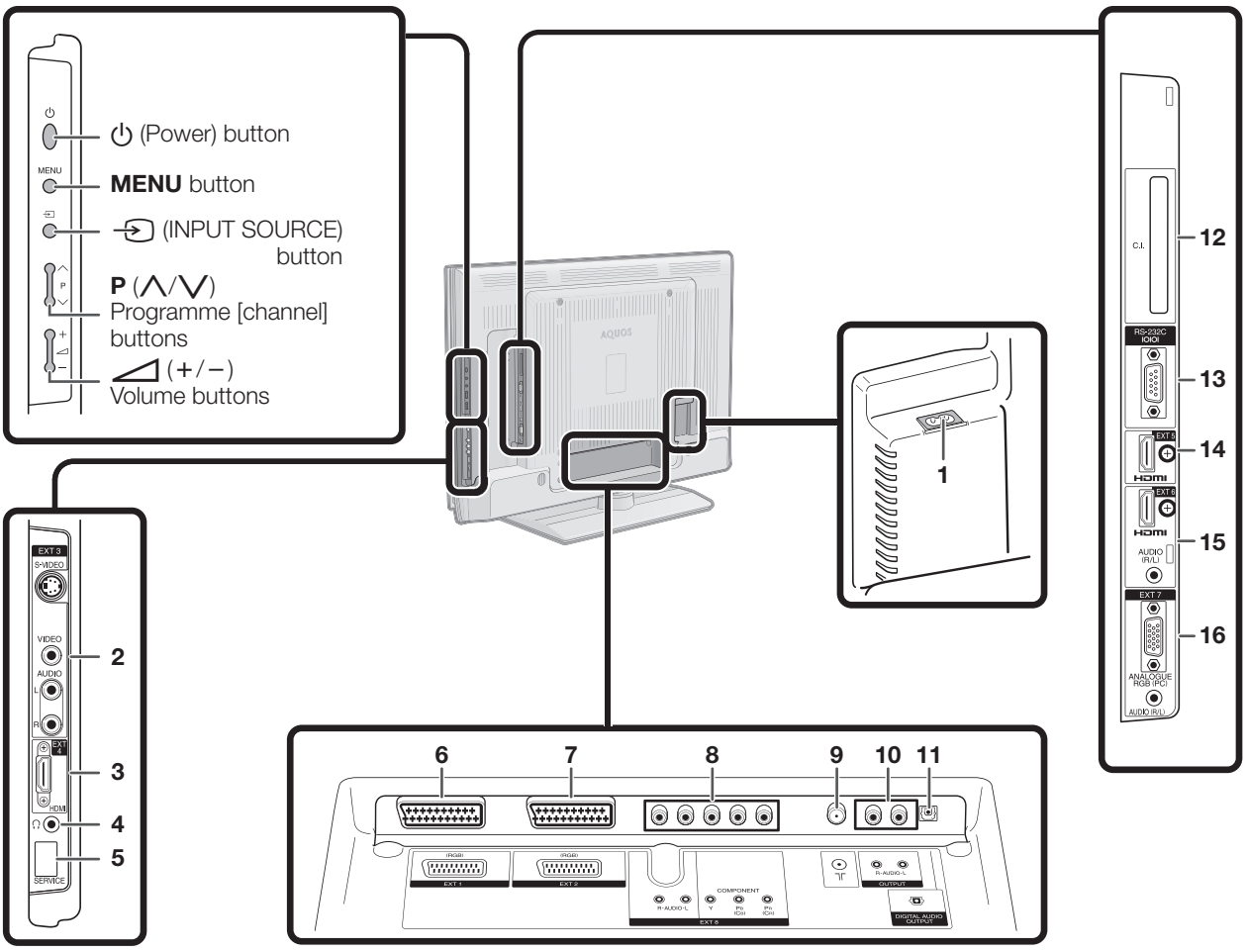
**22 AQUOS LINK buttons** DVD STB VCR
TV mode: If external equipment such as a AQUOS BD Player is connected via HDMI cables and is AQUOS LINK compatible, you can use these AQUOS LINK buttons. See pages 20 and 22 for details.
DVD/VCR mode: Press **OPTION** to pause the picture.
- The buttons except **OPTION** are correspondingly used to select the items on the screen.

STB mode: Only the ⏻ | button can be used to operate on STB.

## TV (Front view)




## TV (Rear view)

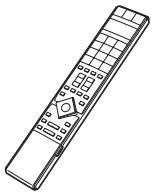



**1** AC INPUT terminal
**2** EXT 3 terminals
**3** EXT 4 (HDMI) terminal
**4** Headphones
**5** SERVICE socket
**6** EXT 1 (RGB) terminal
**7** EXT 2 (RGB) terminal
**8** EXT 8 (COMPONENT/AUDIO) terminals
**9** Antenna terminal
**10** OUTPUT (AUDIO) terminals
**11** DIGITAL AUDIO OUTPUT terminal
**12** COMMON INTERFACE slot
**13** RS-232C terminal
**14** EXT 5 (HDMI) terminal
**15** EXT 6 (HDMI/AUDIO) terminals
**16** EXT 7 (ANALOGUE RGB/AUDIO) terminals

# Preparation

## Supplied accessories

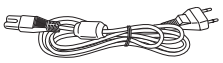
Remote control unit (×1)



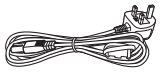
Pages 3 and 6

AC cord

(For Europe, except U.K. and Eire)



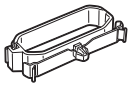
(For U.K. and Eire)



U.K. type 3-pin AC cord is only included with models LC-42XL2E, LC-46XL2E and LC-52XL2E.

Page 8

Cable clamp (×1)



Page 8

Stand unit (×1)

Page 5

- Operation manual (This publication)
- "AAA" size alkaline battery (×2) ... Page 6

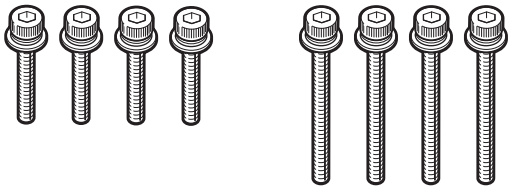
## Attaching the stand unit

- Before attaching (or detaching) the stand, unplug the AC cord from the AC INPUT terminal.
- Before performing work spread cushioning over the base area to lay the TV on. This will prevent it from being damaged.

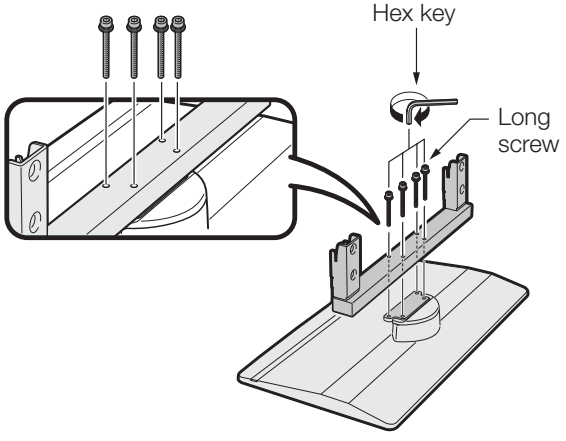
**CAUTION**

- **Attach the stand in the correct direction.**
- **Be sure to follow the instructions. Incorrect installation of the stand may result in the TV falling over.**

**1** Confirm that there are 8 screws (4 short screws and 4 long screws) with the stand unit.

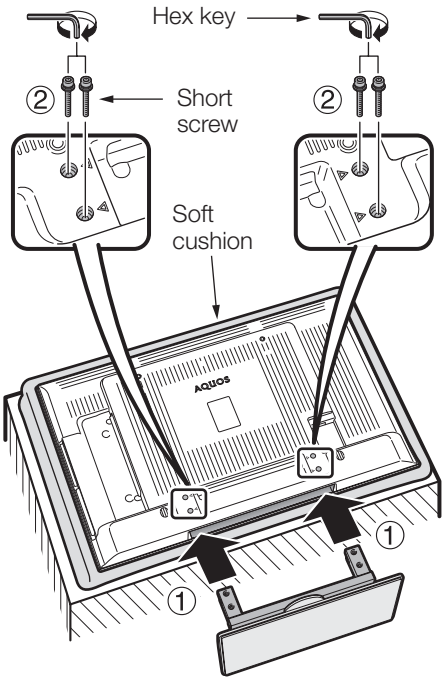


**2** Attach the supporting post for the stand unit onto the base using the 4 long screws with the hex key (supplied) as shown.




**3** ① Insert the stand into the openings on the bottom of the TV. (Hold the stand so it will not drop from the edge of the base area.)

② Insert and tighten the 4 short screws into the 4 holes on the rear of the TV.




**NOTE**

- To detach the stand unit, perform the steps in reverse order.

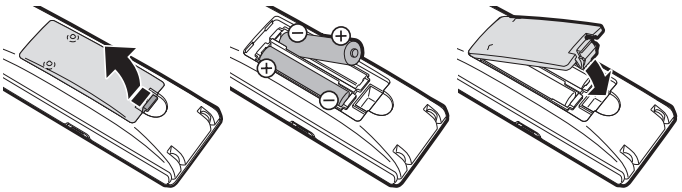
## Inserting the batteries

Before using the TV for the first time, insert two “AAA” size batteries (supplied). When the batteries become depleted and the remote control unit fails to operate, replace the batteries with new “AAA” size batteries.

**1** Open the battery cover.

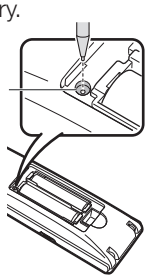
**2** Insert two supplied “AAA” alkaline size batteries.
- Place batteries with their terminals corresponding to the (+) and (−) indications in the battery compartment.

**3** Close the battery cover.



**CAUTION**

Improper use of batteries can result in chemical leakage or explosion. Be sure to follow the instructions below.
- Do not mix batteries of different types. Different types of batteries have different characteristics.
- Do not mix old and new batteries. Mixing old and new batteries can shorten the life of new batteries or cause chemical leakage in old batteries.
- Remove batteries as soon as they have worn out. Chemicals that leak from batteries can cause a rash. If you find any chemical leakage, wipe thoroughly with a cloth.
- When replacing the batteries, use alkaline batteries instead of manganese ones.
- Do not overuse the light-up function of the **LIGHT** button, doing so may shorten the battery life. Replace the batteries when the light on the LCD window or the light-up function becomes weak or when the window becomes blurry.
- Do not continue to use the remote control unit with the batteries running low. This may result in error message or malfunction. Should this happen replace the batteries and leave it unused for a while. Otherwise, you may open the rear battery cover and press the **RESET** button. When you press the **RESET** button, your Universal remote control settings will be deleted.
- The remote control unit has a internal memory of external devices. In order not to lose the data, replace the batteries quickly. If the manufacturer code is initialised and lost, you can input the manufacturer code again. (See page 38 - 41.)
- The batteries supplied with this product may have a shorter life expectancy due to storage conditions.
- If you will not be using the remote control unit for an extended period of time, remove the batteries from it.

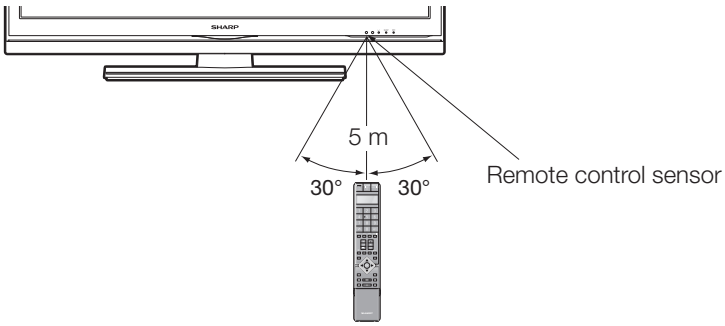



**Note on disposing batteries:**

The batteries provided contain no harmful materials such as cadmium, lead or mercury.
Regulations concerning used batteries stipulate that batteries may no longer be thrown out with the household rubbish. Deposit any used batteries free of charge into the designated collection containers set up at commercial businesses.

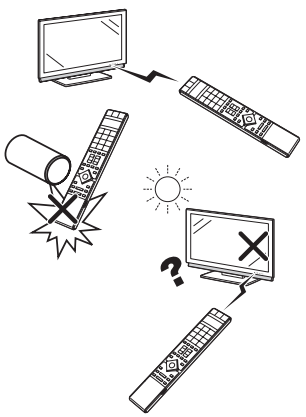
## Using the remote control unit

Use the remote control unit by pointing it towards the remote control sensor. Objects between the remote control unit and sensor may prevent proper operation.




## Cautions regarding the remote control unit

- Do not expose the remote control unit to shock.
  In addition, do not expose the remote control unit to liquids, and do not place in an area with high humidity.
- Do not install or place the remote control unit under direct sunlight. The heat may cause deformation of the unit.
- The remote control unit may not work properly if the remote control sensor of the TV is under direct sunlight or strong lighting. In such case, change the angle of the lighting or TV, or operate the remote control unit closer to the remote control sensor.



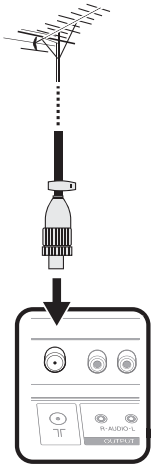
# Quick guide

## Initial installation overview

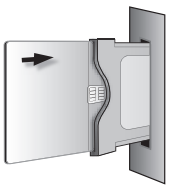
Follow the below steps one by one when using the TV for the first time. Some steps may not be necessary depending on your TV installation and connection.

### 1 Preparation

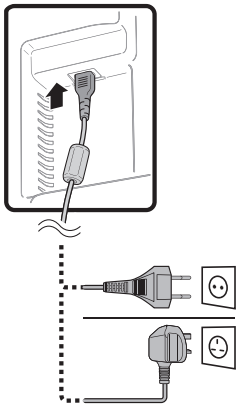
❶ Connect antenna cable to the antenna terminal. (Page 8)



❷ If necessary, insert CA card into the CI slot to watch scrambled broadcasts. (Pages 8 and 19)

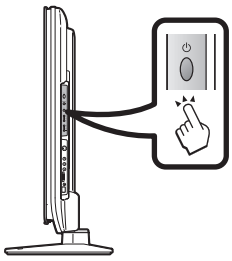


❸ Connect the AC cord to the TV. (Page 8)



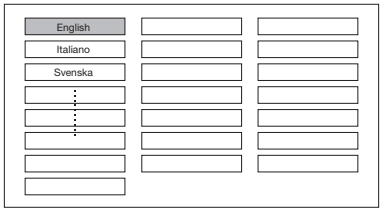
### 2 Power on and run the auto installation

❶ Turn on the TV power with ⏻. (Page 10)

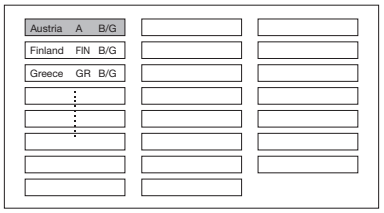


❷ Run the initial auto installation. (Page 9)

✔ Language setting




✔ Country setting




✔ Channel search setting

**Start searching channels**

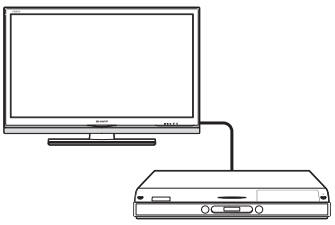
### 3 Watch TV

❶ **Congratulations! Now you can watch TV.**

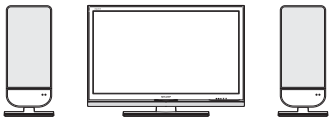
❷ If necessary, adjust the antenna to attain maximum signal reception. (Page 9)

### Connect external devices

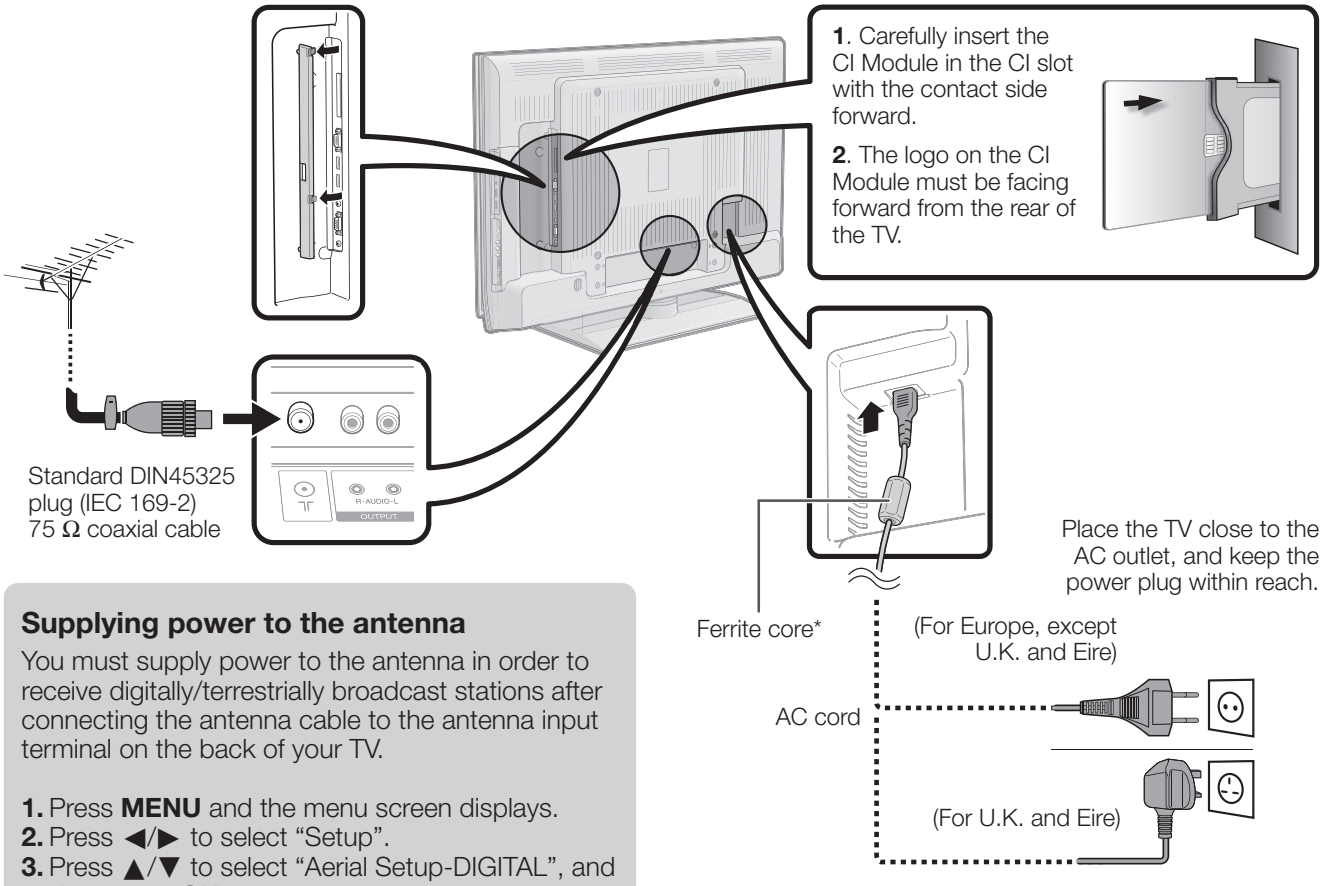
❶ Connect external devices such as a DVD as instructed. (Pages 15 - 17)



❷ Connect external audio devices such as speakers/amplifier as instructed. (Pages 15 and 18)



## Before turning on the power


1. Carefully insert the CI Module in the CI slot with the contact side forward.
2. The logo on the CI Module must be facing forward from the rear of the TV.
Standard DIN45325 plug (IEC 169-2) 75 Ω coaxial cable
R-AUDIO-L
OUTPUT
Ferrite core*
Place the TV close to the AC outlet, and keep the power plug within reach.
(For Europe, except U.K. and Eire)
AC cord
(For U.K. and Eire)

### Supplying power to the antenna

You must supply power to the antenna in order to receive digitally/terrestrially broadcast stations after connecting the antenna cable to the antenna input terminal on the back of your TV.

1. Press **MENU** and the menu screen displays.
2. Press ◀/▶ to select “Setup”.
3. Press ▲/▼ to select “Aerial Setup-DIGITAL”, and then press **OK**.
4. Press ▲/▼ to select “Supply Voltage”, and then press **OK**.
5. Press ◀/▶ to select “On”, and then press **OK**.

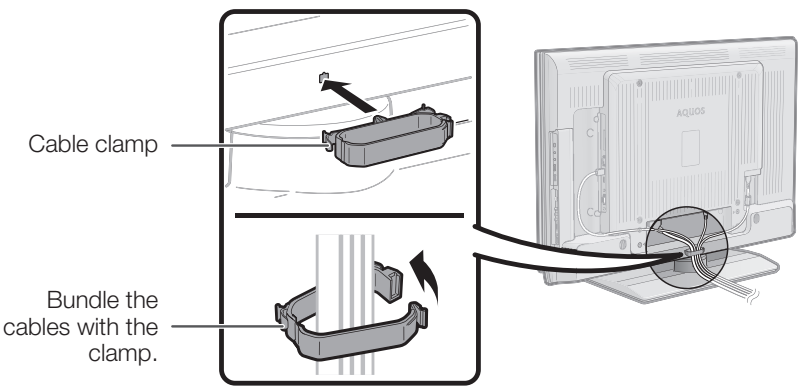
### * Ferrite Core

The Ferrite Core should be permanently attached and never removed from the AC cord.

### Setting the TV on the wall

- **This TV should be mounted on the wall only with the wall mount bracket available from SHARP. (Page 43) The use of other wall mount brackets may result in an unstable installation and may cause serious injuries.**
- **Installing the LCD Colour TV requires special skill that should only be performed by qualified service personnel. Customers should not attempt to do the work themselves. SHARP bears no responsibility for improper mounting or mounting that results in accident or injury.**
- You can ask a qualified service personnel about using an optional bracket to mount the TV to the wall.
- To use this TV mounted on a wall, first remove the adhesive tape at the 2 locations on the rear of the TV, and then use the screws supplied with the wall mount bracket to secure the bracket to the rear of the TV.
- When you mount the TV on the wall, you should attach the supporting post.

## Bundling the cables



## Initial auto installation

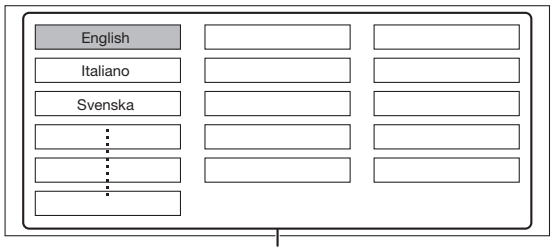
When the TV powers on for the first time after purchase, the initial auto installation wizard appears. Follow the menus and make the necessary settings one after another.

**Confirm the following before turning on the power**

- Is the antenna cable connected?
- Is the AC cord plugged in?

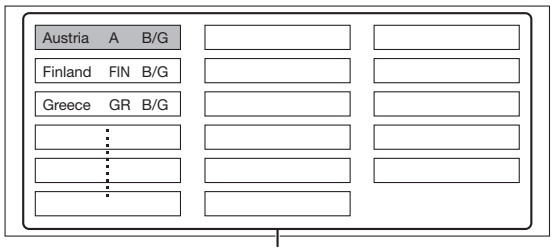
**1** Press ⏻ on the TV.
- The initial auto installation wizard appears.

**2** Setting the on-screen display language




Press ▲/▼/◀/▶ to select the desired language, and then press **OK**.

**3** Setting the country (Location of TV set screen)




Press ▲/▼/◀/▶ to select your country or area, and then press **OK**.
- The Location of TV set screen only appears during the first installation.

**4** Starting channel search

Press ◀/▶ to select “Digital Search” or “Analogue Search”, and then press **OK**.
- If you want to search for more broadcasts, execute “Auto Installation” again from the Setup menu.

**5** The TV searches for, sorts and stores all the receivable TV stations according to their settings and the connected antenna.
- To abort the initial auto installation in progress, press **END**.

**NOTE**
- If you turn off the power on the TV after performing step 4, the initial auto installation wizard does not appear. The auto installation function allows you to execute the installation again from the Setup menu. (Page 26)
- The initial auto installation wizard will go off if you leave the TV unattended for 30 minutes before searching for channels in step 5.

## Checking signal strength and channel strength

If you install a DVB-T antenna for the first time or relocate it, you should adjust the alignment of the antenna to receive a good reception while checking the antenna setup screen.

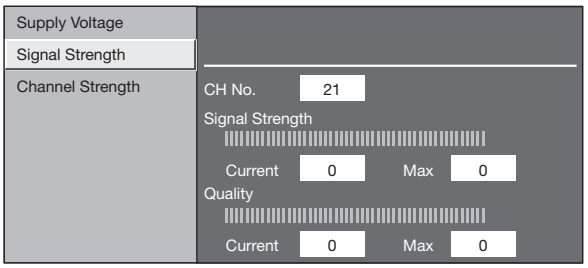
**1** Press **MENU** and the menu screen displays.

**2** Press ◀/▶ to select “Setup”.

**3** Press ▲/▼ to select “Aerial Setup-DIGITAL”, and then press **OK**.

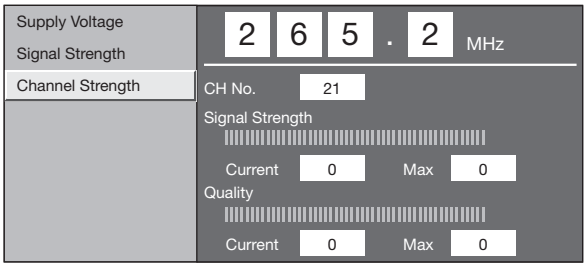
### Checking signal strength

Press ▲/▼ to select “Signal Strength”.




### Checking channel strength

Press ▲/▼ to select “Channel strength”, and then press **OK**.
- You can input a specified frequency band using **0** - **9** numeric buttons.




**4** Position and align the antenna so that the maximum possible values for “Signal Strength” and “Quality” are obtained.

**NOTE**
- The values of “Signal Strength” and “Quality” indicate when to check the appropriate alignment of the antenna.

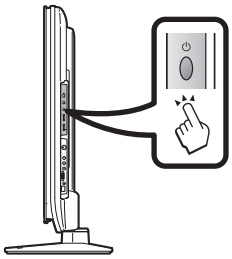
# Watching TV

## Daily operation

## Switching on/off

### Turning on/off the power

Press ⏻ on the TV.
Switch it off by pressing ⏻ on the TV.



- However, please bear in mind that EPG data (electronic programme guide) will be lost, and programmed timer recordings will not be performed by the TV.

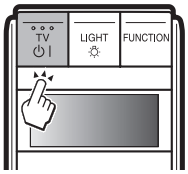
### Standby mode

**To standby mode**

If the TV set is switched on, you can switch it to standby by pressing **TV** ⏻ **|** on the remote control.

**Switching on from standby**

From standby, press **TV** ⏻ **|** on the remote control.




**TV indicator status**

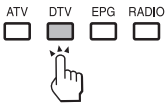
| ⏻ **\| indicator** | **Status** |
|---|---|
| Off | Power off |
| Green | Power on |
| Red | Standby |

**NOTE**

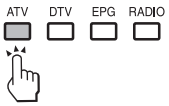
- If you are not going to use this TV for a long period of time, be sure to remove the AC cord from the power outlet.
- A small amount of electric power is still consumed even when ⏻ is turned off.

## Switching between analogue and digital broadcasts

**Watching digital broadcasts**



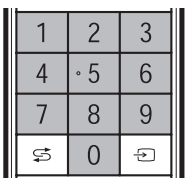

**Watching analogue broadcasts**




## Changing channels

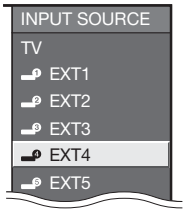
**With P∧/P∨:**

**With 0 - 9:**




## Selecting external video source

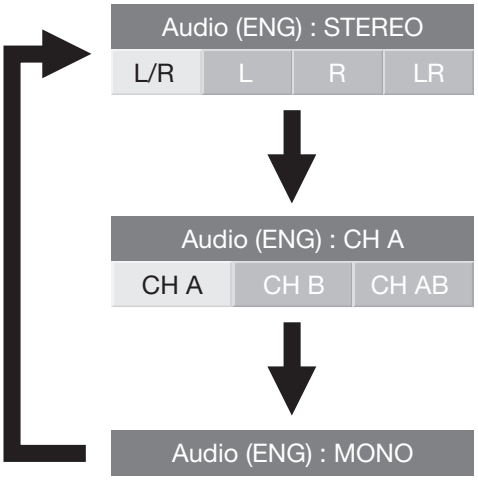
Once the connection is made, press ⏻ to display the INPUT SOURCE screen, and then press ▲/▼ to switch over to the appropriate external source with **OK**.




## Selecting Sound mode

**DTV mode:**

**If multi sound modes are received, each time you press I/II/I+II the mode switches as follows.**




**Press ◀/▶ to select L or R sound when the STEREO or DUAL MONO screen is displayed.**

**NOTE**

- The sound mode OSD disappears in 6 seconds.
- Selectable items vary depending on the received broadcasts.

**ATV mode:**

Each time you press I/II/I+II, the mode switches as illustrated in the following tables.

| **NICAM TV broadcasts selection** | |
|---|---|
| **Signal** | **Selectable items** |
| **Stereo** | NICAM STEREO, MONO |
| **Bilingual** | NICAM CH A, NICAM CH B, NICAM CH AB, MONO |
| **Monaural** | NICAM MONO, MONO |
| **A2 TV broadcasts selection** | |
| **Signal** | **Selectable items** |
| **Stereo** | STEREO, MONO |
| **Bilingual** | CH A, CH B, CH AB |
| **Monaural** | MONO |

**NOTE**

- When no signal is input, the sound mode will display "MONO".

# EPG (Electronic Programme Guide)

EPG (Electronic Programme Guide) is a programme list that is displayed on the screen. With the EPG, you can check the schedule of DTV/RADIO/DATA, view detailed information about them, tune to an event currently on-air and set a timer for future events.

# EPG Overview

## Basic functions

- Select a programme using EPG (Page 12)
- Check programme information (Page 12)

## Useful functions

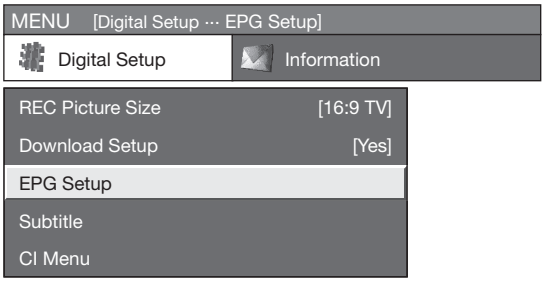
- Search for a programme by category (Page 12)
- Search for a programme by date and time (Page 12)
- Timer recoding using EPG (Page 13)

# Useful settings for using EPG

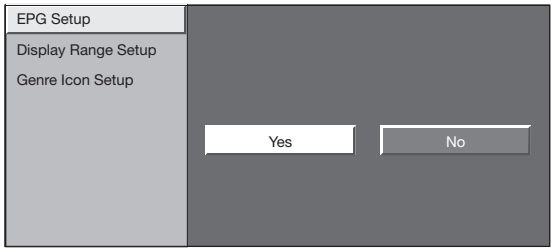
## Common Operation

**1** Press **MENU** to display the menu screen.

**2** Press ◀/▶ to select “Digital Setup”.




**3** Press ▲/▼ to select “EPG Setup”, and then press **OK**.




**4** Press ◀/▶ to select “Yes” or “No”, and then press **OK**.

## EPG display settings

### EPG Setup (setting for receiving EPG data)

If you want to use the EPG for digital stations, select “Yes”. The EPG data must be automatically captured while the TV set is in standby mode. After setting to “Yes”, it may take some time to turn off the power using the remote control due to the process of the data capture.

**NOTE**

- If the TV main power is switched off, the EPG data will not capture.

### Display Range Setup

The Display range setup allows you to select three types of time spans for display on the screen.

**Item**

**Wide Angle:** Display six hours of programme information.
**Zoom:** Display three hours of programme information.
**Vertical Angle:** Change to the EPG display format with a vertical time span.

### Genre Icon Setup

You can grey out or place a mark on desired genres and smoothly search for programmes you frequently watch.

#### Genre Icon List

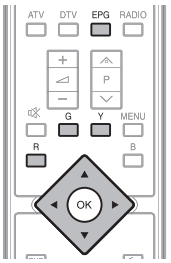
| Icon | Genre | Icon | Genre |
|---|---|---|---|
| | Movie/Drama | | Music/Ballet/Dance |
| | News/Current affairs | | Arts/Culture (without music) |
| | Show/Game show | | Social/Political Issues/ Economics |
| | Sports | | Education/Science/ Factual Topics |
| | Children’s/Youth programmes | | Leisure hobbies |

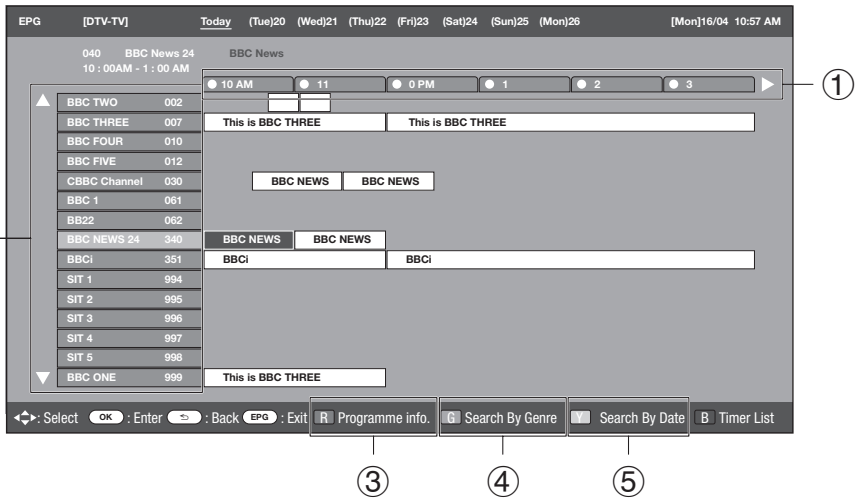
# Selecting a programme using EPG

## Basic Operation

### Display the EPG screen

Press **EPG**.




### Select a programme

#### ① Press ◀/▶ to select the time span you want to search.

- Continue to press ▶ to display programmes in the next time span.

#### ② Press ▲/▼ to select the desired programme.

- If ▲ or ▼ are displayed on the left of the services, continue to press ▲/▼ to display next or previous screen.

### Close the EPG screen

Press **EPG** again.

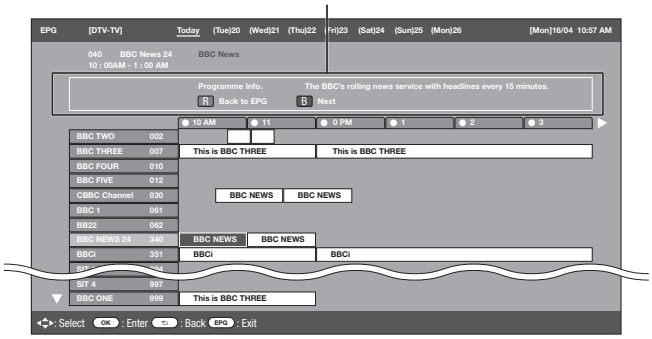
## Selecting a programme

#### ③ Check programme information

**1** Press ▲/▼/◀/▶ to select the programme you want to check.

**2** Press **R**.

Programme Information



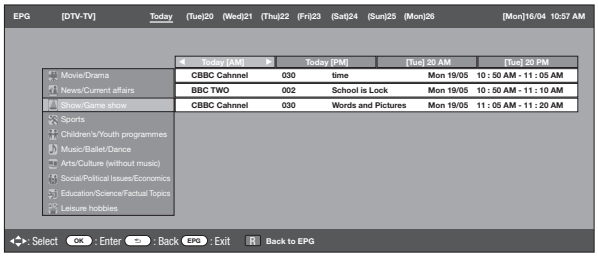

**3** Press **OK** to tune to the selected programme.

#### ④ Search a programme in a category

**1** Press **G**.

**2** Press ▲/▼ to select the desired genre, and then press **OK**.

**3** Press ▲/▼ to select a programme you want to watch, and then press **OK**.

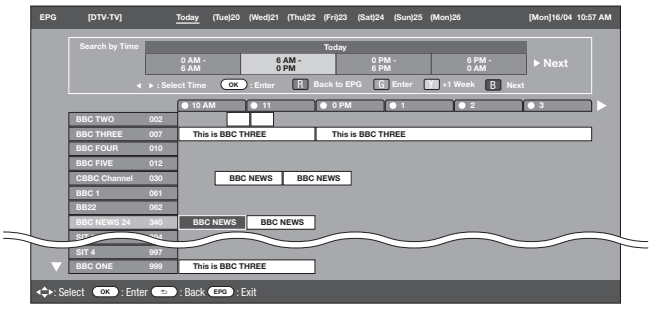



- Refer to page 11 for the genre setting.

#### ⑤ Search for a programme by date/time

**1** Press **Y**.

**2** Press ◀/▶ to select the desired time span and then press **OK**.




**3** Press ▲/▼ to select the desired programme, and then press **OK**.

**NOTE**

- When you select a programme outside of the current time span, the timer setting screen displays. (Page 13)

## Timer recording using EPG

You can record TV programmes using data from the EPG.

**1** Press **EPG**.

**2** Press ▲/▼/◀/▶ to select the programme you want to record, and then press **OK**.

**3** Press ◀/▶ to select the preferred timer setting, and then press **OK**.

- If you select “No”, the TV returns to the EPG screen.

### Selecting “Watch” in the timer setup screen

This setting allows you to switch to a programme at a set time.

① Press ◀/▶ to select “Watch”, and then press **OK**.

② Press ◀/▶ to select “Yes”, and then press **OK**.

- The selected TV programme is marked with an icon.

### Selecting “Record” in the timer setup screen

This setting allows you to record a programme at a set time.

① Press ◀/▶ to select “Record”, and then press **OK**.

② Press ◀/▶ to select the preferred timer recording type, and then press **OK**.

**Item**

**AQUOS LINK:** Record a programme at a set time when a device compatible with AQUOS LINK is connected.
**AV LINK:** Record a programme at a set time when a device compatible with AV LINK is connected.
**VHS tape:** Record a programme at a set time when a device compatible with VHS tape is connected.

**NOTE**

- Refer to pages 15-17 and 21 for connecting external devices.
- The selected TV programme is marked with an icon.

## Cancelling the timer recording

**1** Press **EPG**.

**2** Press ▲/▼/◀/▶ to select the programme on timer setup, and then press **OK**.

**3** Press ◀/▶ to select “Cancel” , and then press **OK**.

### Cancelling using B button on the remote control

**1** Press **EPG**.

**2** Press **B** to display the timer recording screen.

**3** Press ▲/▼ to select a programme with a set timer recording you want to change, and then press **OK**.

**4** Press ◀/▶ to select “Cancel” and then press **OK**.

# Teletext

### What is Teletext?

Teletext broadcasts pages of information and entertainment to specially equipped television sets. Your TV receives Teletext signals broadcast by a TV network, and decodes them into graphical format for viewing. News, weather and sports information, stock exchange prices and programme previews are among the many services available.

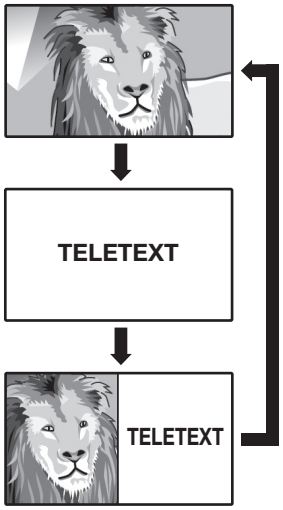
### Turning on and off Teletext

**1** Select a TV channel or external source providing a Teletext programme.

**2** Press ☰ to display the Teletext.

100 100 ARD-Text 10.09.04 14:14:42
ARD TEXT
Teletext im Ersten
Index
> 101
Bulmahn: Bildung statt Eigenheim . . . . . 120
Wird auch der Nahverkehr teurer? . . . . . 121
Australien: Keine Zugeständnisse . . . . . 122
Tote bei Zugunglück in Schweden . . . . . 532
Tennis: Haas unterliegt Hewitt . . . . . 204
Formel 1: Schumacher erneut vorne . . . . . 213
Tagesschau . . 110/112
Wetter. . . . . 170
Sport. . . . . 200/600
TV Guide . . . 300/400
Kultur. . . . . 500
Gesellschaft . . . 530
Lotto/Toto . . 666
Wirtschaft. . . . . 700
Internet: www.ard-text.de
–
+
Inhalt
tagesschau

- Many stations use the TOP operating system, while some use FLOF (e.g. CNN). Your TV supports both these systems. The pages are divided into topic groups and topics. After switching on the teletext, up to 2000 pages are stored for fast access.
- Each time you press ☰, the screen switches as shown below.
- Press ☰ again to display the Teletext on the right screen and the normal image on the left screen.
- If you select a programme with no Teletext signal, “No Teletext available.” displays.
- The same message displays during other modes if no Teletext signal is available.




**NOTE**

- Teletext will not work if the selected signal type is RGB. (See page 32)

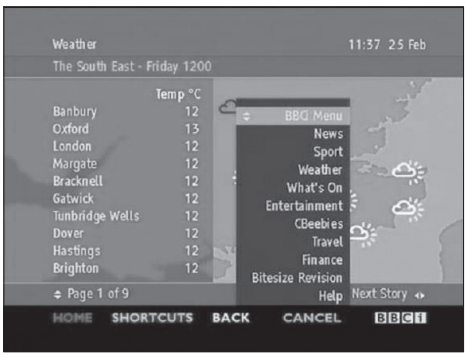
### Buttons for teletext operations

| Buttons | Description |
|---|---|
| **P (∧/∨)** | Increase or decrease the page number. |
| **Colour (R/G/Y/B)** | Select a group or block of pages displayed in the coloured brackets at the bottom of the screen by pressing the corresponding **Colour (R/G/Y/B)** on the remote control unit. |
| **0 - 9** | Directly select any page from 100 to 899 by using **0** - **9**. |
| **(Top/ Bottom/Full)** | Switch the Teletext image to Top, Bottom or Full. |
| **(Reveal hidden Teletext)** | Reveal or hide hidden information such as an answer to a quiz. |
| **(Freeze/ Hold)** | Stop updating Teletext pages automatically or release the hold mode. |
| **(Subtitle for Teletext)** | Display the subtitle or exit the subtitle screen.<br>• Subtitles will not be displayed when the service does not contain subtitle information. |
| **(Subpage)** | Reveal or hide subpages.<br>• **R** button: Move to the previous subpage.<br>• **G** button: Move to the following subpage.<br>• These two buttons are shown on the screen by the signs − and +. |

# Using the MHEG5 application (UK only)

Some services bring you programmes with the MHEG (Multimedia and Hypermedia Expert Group) application encoded, letting you experience DTV interactively. When provided, the MHEG5 application will start when you press ☰.

### Sample MHEG5 screen



# Connecting external devices

### Before connecting ...

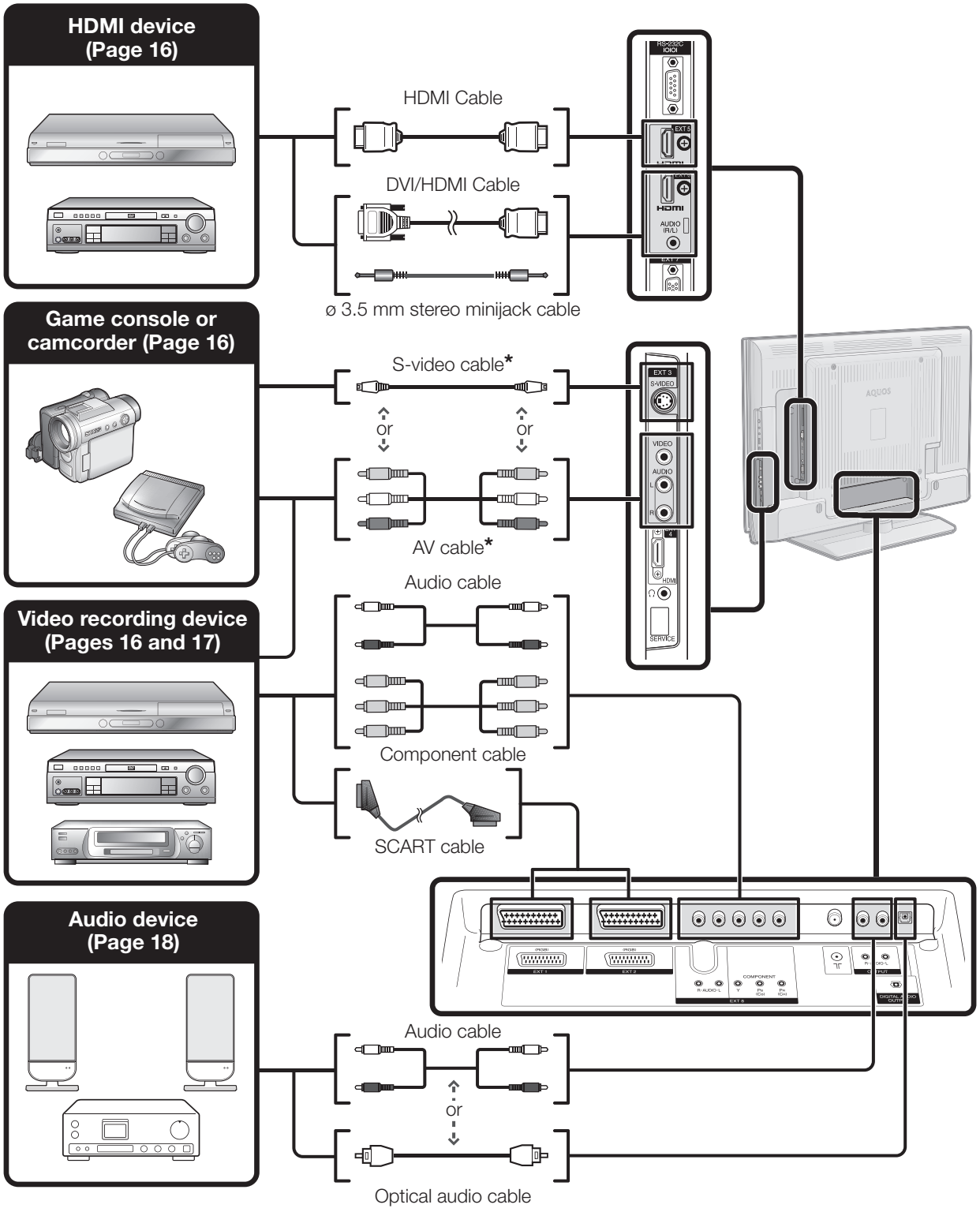
- Be sure to turn off the TV and any devices before making any connections.
- Firmly connect a cable to a terminal or terminals.
- Carefully read the operation manual of each external device for possible connection types. This also helps you get the best possible audiovisual quality to maximise the potential of the TV and the connected device.

## Introduction to connections

The TV is equipped with the terminals as showed below. Find the cable corresponding the TV's terminal and connect the device.

**NOTE**

- The cables illustrated in pages 15 to 18 are commercially available items.



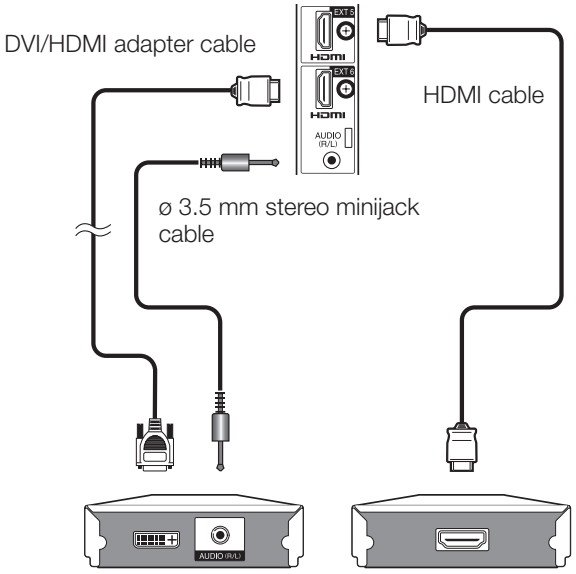

*** When using an S-video cable, you also need to connect an audio cable (R/L).**

## HDMI connection

### Example of connectable devices

● DVD ● Blu-ray player/recorder

The HDMI connections (High Definition Multimedia Interface) permit digital video and audio transmission via a connection cable from a player/recorder. The digital picture and sound data are transmitted without data compression and therefore lose none of their quality. Analogue/digital conversion is no longer necessary in the connected devices, which also would result in quality losses.




**DVI/HDMI conversion**
Using an DVI/HDMI adapter cable, the digital video signals of a DVD can also be played via the compatible HDMI connection. The sound must be fed in additionally.

Both HDMI and DVI use the same HDCP copy protection method.

### ● After connecting

**HDMI Audio Select**

After connecting, you must set the audio signal compatible with the cable you use for the HDMI device.

1 Go to MENU > Option > HDMI Audio Select

2 Select “Digital” for audio signals via the HDMI terminal. Select “Analogue” for audio signals via the AUDIO jack (EXT6).

**NOTE**

- **If a connected HDMI device is AQUOS LINK compatible, you can take advantage of versatile functions. (Pages 20 - 22)**
- Video noise may occur depending on the type of HDMI cable used. Make sure to use certified HDMI cable.
- When playing the HDMI image, the best possible format for the picture will be detected and set automatically.

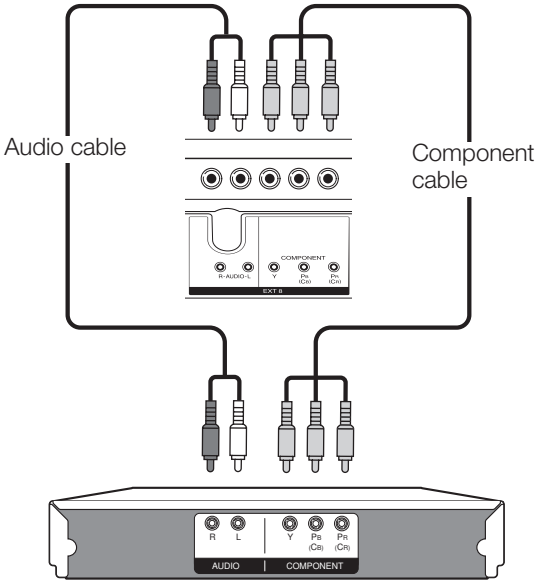
**Supported video signal:**
576i, 576p, 480i, 480p, 1080i, 720p, 1080p
See page 36 for PC signal compatibility.

## Component connection

### Example of connectable devices

● VCR ● DVD ● Blu-ray player/recorder

You will enjoy accurate colour reproduction and high quality images through the EXT 8 terminal when connecting a DVD recorder or other recording equipment.

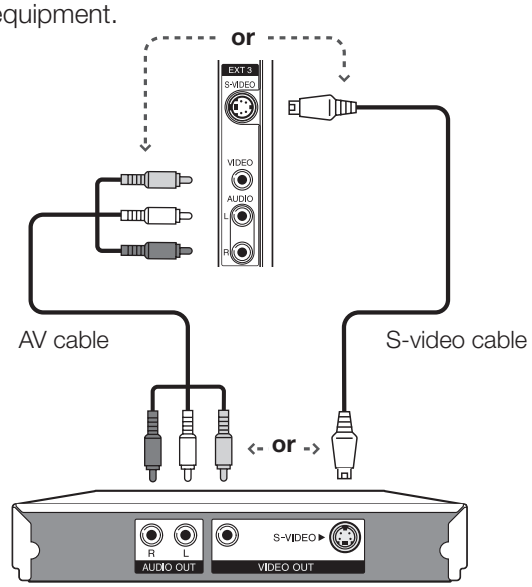



## S-VIDEO/VIDEO connection

### Example of connectable devices

● VCR ● DVD ● Blu-ray player/recorder
● Game console ● Camcorder

You can use the EXT 3 terminal when connecting to a game console, camcorder, a DVD recorder and some other equipment.



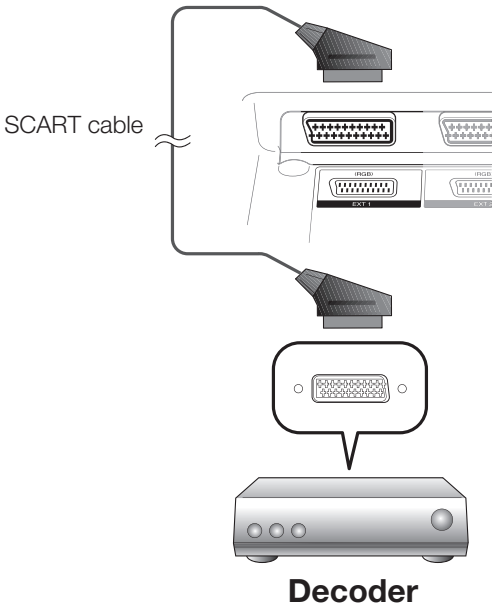

**NOTE**

- **When using an S-video cable, you also need to connect an audio cable (R/L).**
- EXT3: The S-VIDEO terminal has priority over the VIDEO terminal.

## SCART connection

**Example of connectable devices**
● Decoder

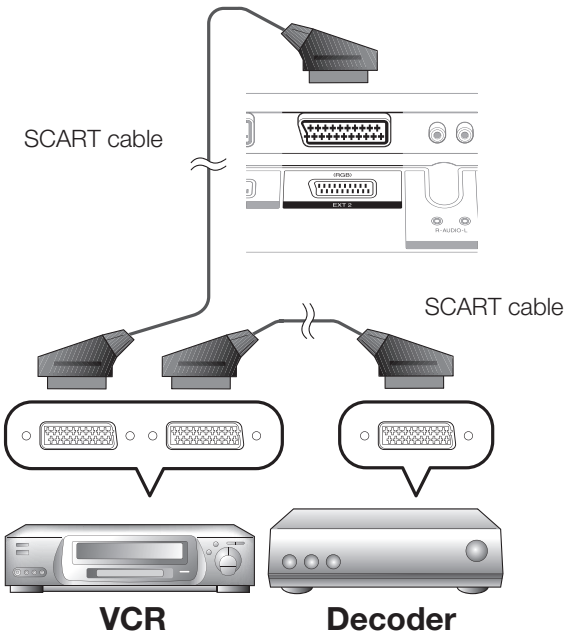
### When using the EXT 1 (SCART) terminal




**Example of connectable devices**
● VCR ● DVD recorder

### When using the EXT 2 (SCART) terminal

If your VCR supports TV-VCR advanced AV Link systems, you can connect the VCR using a fully wired SCART cable.




**NOTE**
- In cases when the decoder needs to receive a signal from the TV, make sure to select the appropriate input terminal to which the decoder is connected in “Manual adjust” in the “Analogue Setting” menu. (Page 27)
- TV-VCR advanced AV Link systems may not be compatible with some external sources.
- Do not connect the decoder to the EXT2 terminal.
- You cannot connect the VCR with Decoder using a fully wired SCART cable when selecting “Y/C” under the EXT2 in the “Input Select” menu.

## Controlling devices with SCART using AV Link

This TV incorporates four typical AV Link functions for smooth connections between the TV and other audiovisual equipment.

**One Touch Play**
While the TV is in standby mode, it automatically turns on and plays back the image from the audiovisual source (e.g. VCR, DVD).

**TV Standby**
When the TV enters standby mode, the connected audiovisual equipment (e.g. VCR, DVD) enters standby mode as well.

**WYSIWYR (What You See Is What You Record)**
When the remote control unit of the connected VCR has the WYSIWYR button, you can automatically start recording by pressing the WYSIWYR button.

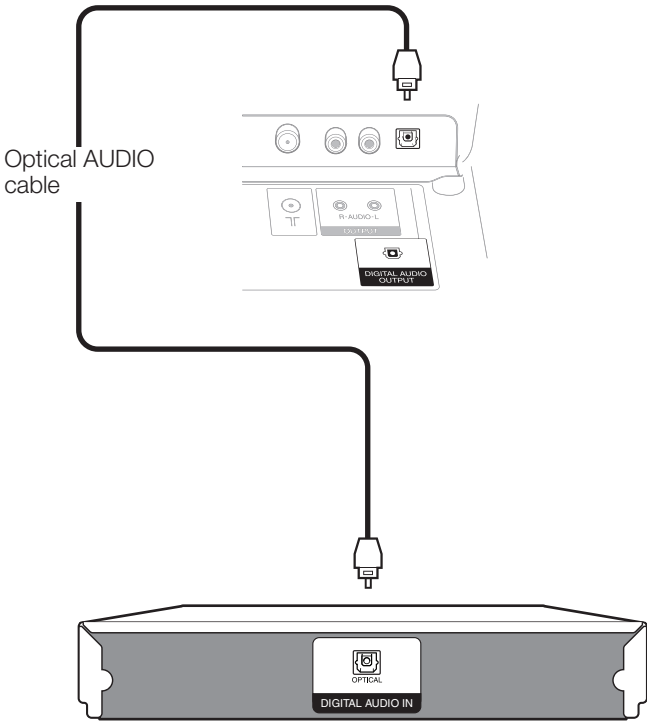
**Preset Download**
Automatically transfers the channel preset information from the tuner on the TV to the one on the connected audiovisual equipment (e.g. VCR) via the EXT 2 terminal.

**NOTE**
- Refer to the operation manuals of external equipment the details.
- Only works when the audiovisual equipment is connected to the EXT 2 terminal on the TV with AV Link via a fully wired SCART.
- The use of the AV Link function is only possible if the TV-set has enforced a complete auto installation with the connected audiovisual equipment. (Page 9, initial auto installation)
  The availability of the AV Link function depends on the audiovisual equipment used. Depending on the manufacturer and type of equipment used, it is possible that the described functions may be completely or partially unusable.

## Speaker/amplifier connection

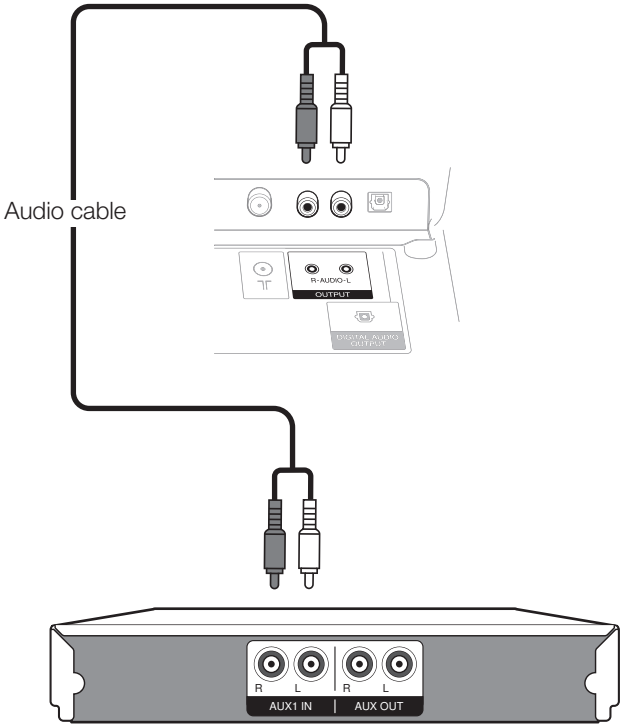
Connect an amplifier with external speakers as shown below.

### Connecting an amplifier with digital audio input




**Amplifier with digital audio input**

### Connecting an amplifier with analogue audio input




**Amplifier with analogue audio input**

### After connecting

**Digital audio output setting**

After connecting an amplifier with digital audio input and external speakers as shown, you should set an audio output format compatible with the programme you are watching or the device connected.

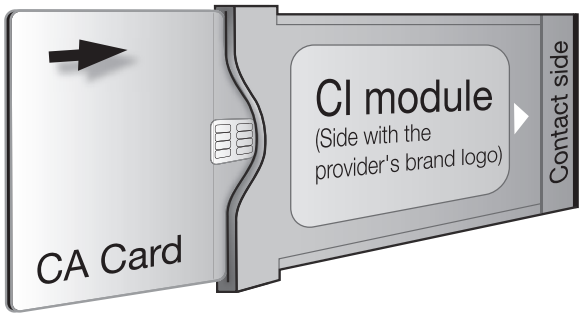
Go to MENU > Option > Digital Audio Output > select “PCM” or “Dolby Digital”

## Inserting a CA Card

In order to receive coded digital stations, a Common Interface Module (CI Module) and a CA Card must be inserted in the CI slot of your TV set. (Page 8)
The CI Module and the CA Card are not supplied accessories. They are usually available from your dealer.

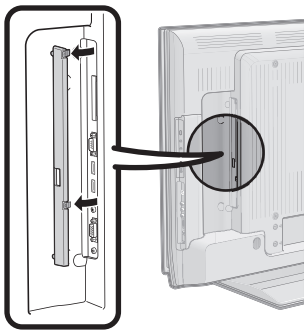
### Inserting the CA Card into the CI Module

**1** With the side with the gold coloured contact chip facing the side of the CI Module marked with the provider's logo, push the CA Card into the CI Module as far as it will go. Note the direction of the arrow printed on the CA Card.

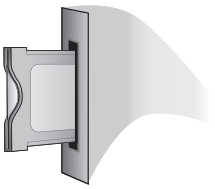



### Inserting the CI Module in the CI slot

**2** Remove the rear terminal cover.



**3** Carefully insert the CI Module in the CI slot with the contact side forward.
The logo on the CI Module must be facing forward from the rear of the TV. Do not use excessive force. Make sure the module is not bent in the process.



### Checking CI Module information

**NOTE**
- Make sure that the CI Module is properly inserted.
- This menu is only available for digital stations.

**1** Press **MENU** and the menu screen displays.

**2** Press ◀/▶ to select "Digital Setup".
- The content of this menu depends on the provider of the CI Module.

**3** Press ▲/▼ to select "CI Menu", and then press **OK**.

**4** Press ▲/▼ to select the following desired item, and then press **OK**.

**Module**
General information on CI Module displays.

**Menu**
Adjustment parameters of each CA CARD displays.

**Enquiry**
You can input numerical values such as passwords here.

**NOTE**
- The content of each screen depends on the manufacturer of the CI module.

### Removing the CI Module

**1** Remove the cover from the rear of the set.

**2** Remove the module from the set.

**3** Replace the cover.

# AQUOS LINK

## Controlling HDMI devices using AQUOS LINK

**What is AQUOS LINK?**
Using the HDMI CEC (Consumer Electronics Control) protocol, with AQUOS LINK you can interactively operate compatible system devices (AV amplifier, DVD, Blu-ray Disc device) using a single remote control.

**NOTE**
- AQUOS LINK-compatible AQUOS BD Player, AQUOS AUDIO speaker system and AQUOS Recorder are to be on sale after the release of this TV. (As of September 2007)

### What you can do with AQUOS LINK

#### ✔ One Touch Recording (DTV only)

You do not have to search for the remote control of your recording device. Press the **REC** ● or **REC STOP** ■ buttons inside the flip cover to start/stop recording what you see on the recorder.

#### ✔ One Touch Play

While the TV is in standby mode, it automatically turns on and plays back the image from the HDMI source.

#### ✔ Single remote control operation

The AQUOS LINK automatically recognises the connected HDMI device and you can control the TV and the devices as if using a universal remote control.

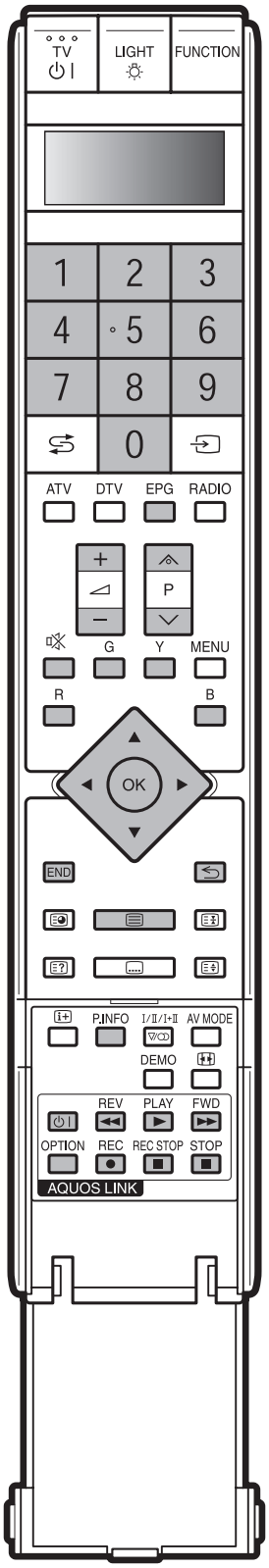
#### ✔ Operating Title list of external devices

In addition to displaying the TV's own Timer list (Page 12), you can also call up the external player's Top menu or AQUOS BD Player's/AQUOS Recorder's Title list provided that the devices support AQUOS LINK.

#### ✔ Multiple control of HDMI devices

You can select which HDMI device to operate using the **OPTION** button.

**NOTE**
- Point the remote control toward the TV, not to the connected HDMI device.
- Video noise may occur depending on the type of HDMI cable used. Make sure to use a certified HDMI cable.
- Up to 3 HDMI recording devices, one AV amplifier and two players can be connected using this system.
- These operations affect the HDMI device selected as the current external source. If the device does not operate, turn on the device and select the appropriate external source using ⏎.
- When you insert/remove HDMI cables or change connections, turn on all connected HDMI devices before turning on the TV. Confirm that picture and audio are correctly output by selecting "EXT4", "EXT5" or "EXT6" from the INPUT SOURCE menu.

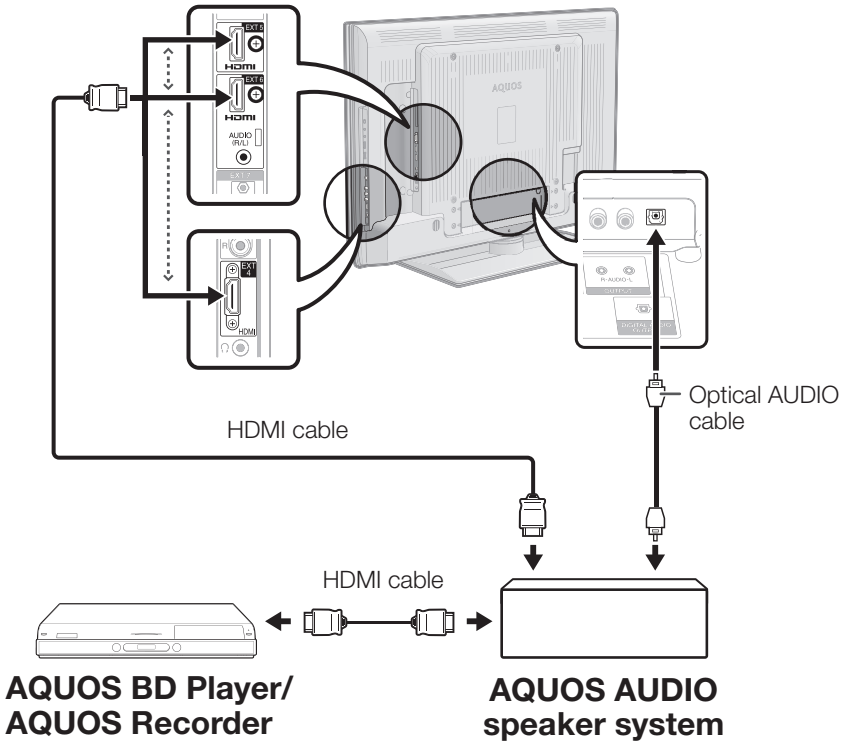


## AQUOS LINK connection

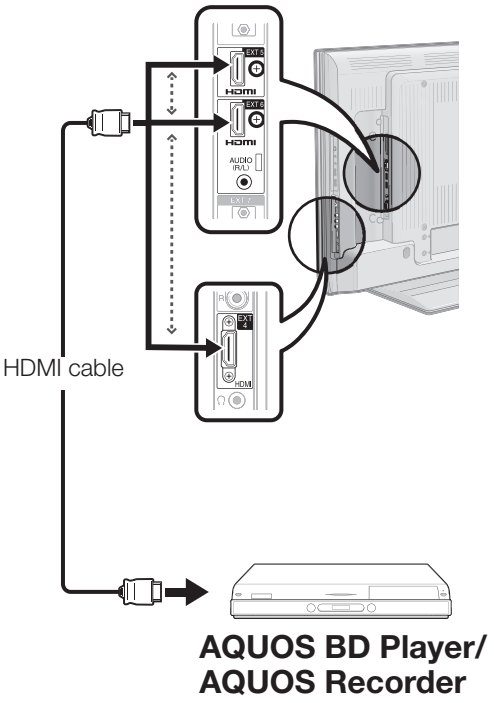
First connect the AQUOS AUDIO speaker system or an AQUOS BD Player/AQUOS Recorder that supports the HDMI CEC protocol.

**NOTE**
- Refer to the operation manual of the device to be connected for further details.
- After unplugging connection cables or changing the connection pattern, first turn on the power of the TV with all relevant device's power turned on. Change the external input source by pressing ⏎, select the appropriate external source and verify the audiovisual output.
- The cables illustrated in the following explanation are commercially available items.

**Connecting an AQUOS BD Player/AQUOS Recorder via the AQUOS AUDIO speaker system**




**Connecting an AQUOS BD Player/AQUOS Recorder only**




## AQUOS LINK Setup

### AQUOS LINK Auto power on

If this is activated, the One Touch Play function is enabled. While the TV is in standby mode, it automatically turns on and plays back the image from the HDMI source.

1 Press **MENU** and the menu screen displays.

2 Press ◀/▶ to select "Option".

3 Press ▲/▼ to select "AQUOS LINK Setup", and then press **OK**.

4 Press ▲/▼ to select "Auto Power On", and then press **OK**.

5 Press ◀/▶ to select "On", and then press **OK**.

**NOTE**
- The factory default for this item is "Off".

### Selecting recorder

Here, you can select a recorder for the recording from several connected recorders.

1 Repeat steps 1 to 3 in **AQUOS LINK Auto power on**.

2 Press ▲/▼ to select "Selecting Recorder", and then press **OK**.

3 Select the recorder, and then press **OK**.

**NOTE**
- If you have connected the AQUOS AUDIO speaker system between the TV and an AQUOS Recorder, the external source's indication changes from "EXT5" to "EXT5 (Sub)".

### Using Genre Info.

This function allows you to automatically switch to the appropriate sound mode depending on the genre information included the digital broadcast.

1 Repeat steps 1 to 3 in **AQUOS LINK Auto power on**.

2 Press ▲/▼ to select "Using Genre Info.", and then press **OK**.

3 Press ◀/▶ to select "On", and then press **OK**.

## Operating an AQUOS LINK device

AQUOS LINK allows you to operate the HDMI-connected device with one remote control.

1 Open the remote control's flip cover.

2 Press **PLAY** ▶ to start playback of a title.
- See the right column, section "**Playback of titles using AQUOS LINK**" if you want to start playback using the list of the titles of the AQUOS BD Player/ AQUOS Recorder.

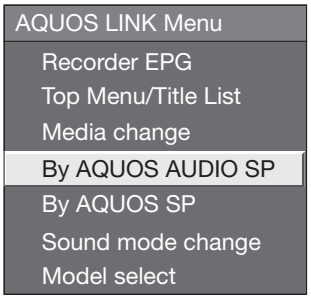
3 Press **FWD** ▶▶ to fast forward.
Press **REV** ◀◀ to reverse.
Press **STOP** ■ to stop.
Press ⏻ | to turn the HDMI-connected device on/off.

### Listening with the AQUOS AUDIO speaker system

You can opt to listen to the TV sound only from the AQUOS AUDIO speaker system.

1 Open the remote control's flip cover.

2 Press **OPTION**.




3 Press ▲/▼ to select "By AQUOS AUDIO SP", and then press **OK**.
- The sound from the TV speaker and headphone terminal is silenced and only the sound from the AQUOS AUDIO speaker system is audible.

### Listening with the AQUOS TV speaker system

You can opt to listen to the TV sound only from the AQUOS TV speaker system.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "By AQUOS SP", and then press **OK**.

### Manually changing the AQUOS AUDIO speaker system's sound mode

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "Sound mode change".

4 The sound mode changes every time you press **OK**.
- Refer to the operation manual of the AQUOS AUDIO speaker system for details.

### Playback of titles using AQUOS LINK

This section explains how to play back a title in the AQUOS BD Player/AQUOS Recorder.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "Top Menu/Title List", and then press **OK**.
- The linked recorder now powers on and the TV automatically selects the appropriate external input source.
- The title list data from the connected AQUOS BD Player/AQUOS Recorder displays.

4 Select the title with ▲/▼/◀/▶, and then press **PLAY** ▶.

### Selecting media type for CEC-compatible recorder

If your recorder has multiple storage media, select the media type here.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "Media change", and then press **OK**.

4 Select the desired medium, such as DVD or HDD. The media type changes every time you press **OK**.

### HDMI device selection

If multiple HDMI devices are connected in a daisy chain, you can specify which device to control here.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "Model select", and then press **OK**. The HDMI device changes every time you press **OK**.

### Recording via the AQUOS Recorder EPG (only for recorders)

You can call up the CEC-compatible recorder's EPG and preset timer recordings using the TV's remote control.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK Menu displays.

3 Press ▲/▼ to select "Recorder EPG", and then press **OK**.
- The external input source switches and the recorder's EPG is displayed.

4 Select the programme to record.
- Refer to the operation manual of the recorder for details.

# Menu operation

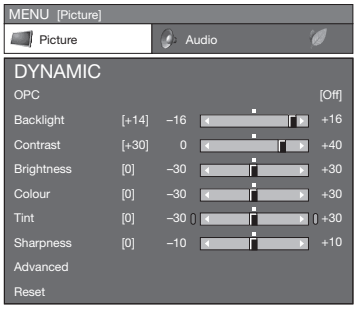
## What is the Menu?

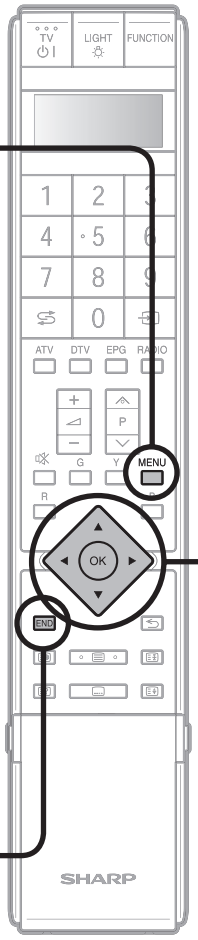
- You need to bring up the On-Screen Display to perform settings for the TV. The On-Screen Display for the settings is called “Menu”.
- The Menu enables various settings and adjustments.
- The Menu can be operated with the remote control unit.

## Common operations

### 1 Display the Menu Screen

Press **MENU** and the MENU screen displays.



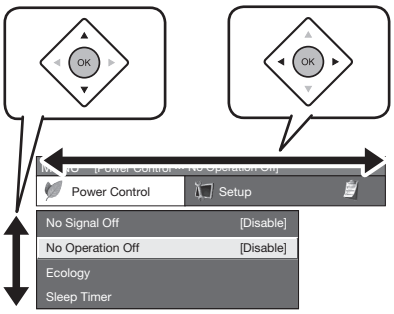




### 2 Select an item

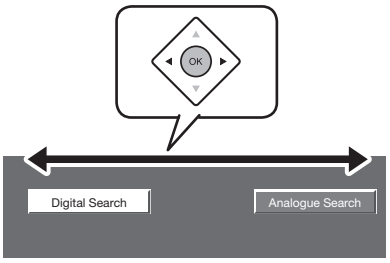
Press ▲/▼/◀/▶ to select/adjust the desired menu, and adjust the item to the desired level, and then press **OK**.

Press ⮌ to return to the previous Menu page.

**Selecting in the Menu**




**Selecting options**




### 3 Exit the Menu screen

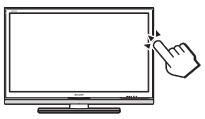
The operation will exit the menu screen if you press **END** before it is completed.

**NOTE**

- Menu options differ in the selected input modes, but the operating procedures are the same.
- The screens in the operation manual are for explanation purposes (some are enlarged, others cropped) and may vary slightly from the actual screens.
- Items with ⃠ cannot be selected for various reasons.

### Operation without a remote control

This function is useful when there is no remote control within your reach.



1 Press **MENU** briefly to display the direct control screen.

2 Press **P** ∧/∨ instead of ▲/▼ or ◿ +/– instead of ◀/▶ to select the item.

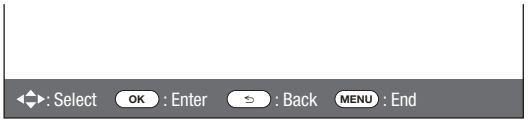
3 Press ⮆ to complete the setting.

**NOTE**

- The direct control menu screen will disappear if left unattended for several seconds.

### About the Guide Display

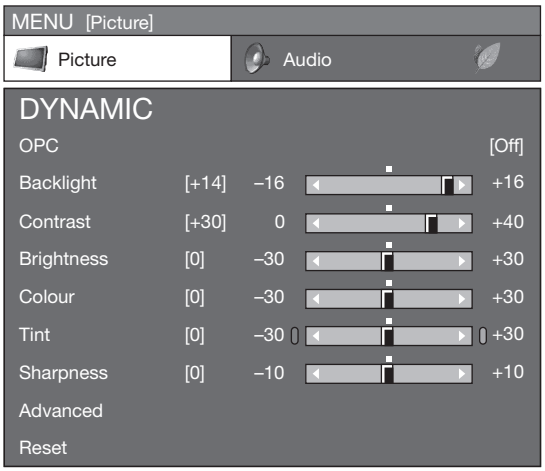
The Guide Display at the bottom of the screen shows operations with an On-Screen Display.




The bar above is an operational guide for the remote control. The bar will change in accordance with each menu setting screen.

# Basic adjustment

## Picture Settings




Picture

### OPC

Automatically adjust the brightness of the screen.

**Item**

**Off:** The brightness is fixed at the value set in Backlight.
**On:** Automatically adjusts
**On:Display:** Displays the OPC effect on the screen while adjusting the brightness of the screen.

**NOTE**

- When set to “On”, the TV senses the surrounding light and automatically adjusts the backlight brightness. Make sure no object obstructs the OPC sensor, which could affect its ability to sense surrounding light.

Picture

### Picture adjustments

Adjust the picture to your preference with the following picture settings.

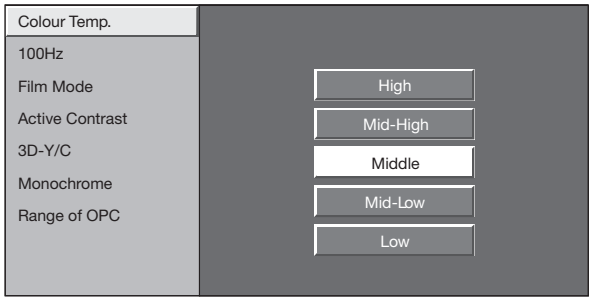
**Adjustment items**

| Selectable items | ◀ button | ▶ button |
|---|---|---|
| **Backlight** | The screen dims | The screen brightens |
| **Contrast** | For less contrast | For more contrast |
| **Brightness** | For less brightness | For more brightness |
| **Colour** | For less colour intensity | For more colour intensity |
| **Tint** | Skin tones become purplish | Skin tones become greenish |
| **Sharpness** | For less sharpness | For more sharpness |

Picture

### Advanced

This TV provides various advanced functions for optimising the picture quality.




#### Colour Temp.

Adjust the colour temperature to give the best white image.

**Item**

**High:** White with bluish tone
**Mid-High:** Intermediate tone between High and Middle
**Middle:** Natural tone
**Mid-Low:** Intermediate tone between Middle and Low
**Low:** White with reddish tone

#### 100Hz

100Hz technology provides superior solutions for digital display picture quality removing motion blur.

**NOTE**

- Press **DEMO** on the remote control unit to show 100Hz demonstration in a dual screen format.
- This effect is greater on fast moving images.
- 100 Hz will have no effect in the following cases;
  1) The type of signal received is a PC signal.
  2) An OSD is being displayed.
  3) Teletext is activated.
- If images appear blurred, set the “Film Mode” to “Off”.

#### Film Mode

Automatically detects a film-based source (originally encoded at 24/25 frames/second, depending on the vertical frequency), analyses it and then recreates each still film frame for high-definition picture quality.

#### Active Contrast

Automatically adjusts the contrast of an image according to the scene.

#### 3D-Y/C

Provide high quality images with minimal dot crawl and cross colour noise by detecting changes in the image.

**Item**

**Standard:** Normal adjustment
**Fast:** Set the optimum image quality for fast-moving images.
**Slow:** Set the optimum image quality for slow-moving images.
**Off:** No detecting

**NOTE**

- 3D-Y/C may not operate depending on the input signal type or noisy input signal.
- 3D-Y/C has even more effect on composite video signals (CVBS).

### Monochrome

For viewing a video in monochrome.

### Range of OPC

The brightness level range of the OPC sensor's automatic adjustments can be set according to your preferences. The adjustment range of the OPC sensor can be set to a maximum of +16 and a minimum of −16.

| Selectable items | Description |
|---|---|
| **Max.** | −16 through +16 |
| **Min.** | −16 through +16 |

**NOTE**

- This function is available only when the "OPC" setting is set to "On" or "On: Display".
- The maximum setting cannot be set to a smaller number than the minimum setting.
- The minimum setting cannot be set to a bigger number than the maximum setting.
- The maximum and minimum settings cannot be set to the same number.
- Depending on the brightness of the surrounding light, the OPC sensor might not operate if the adjustment range is small.

## AV Mode

AV Mode gives you five viewing options to choose from to best match the system environment, which can vary due to factors like room-brightness, type of programme watched or the type of image input from external equipment.

**1** Press **AV MODE**.

**2** Each time you press **AV MODE**, the mode changes.

- You can also switch the mode on the "Picture" and "Audio" menu screen by pressing **AV MODE**.

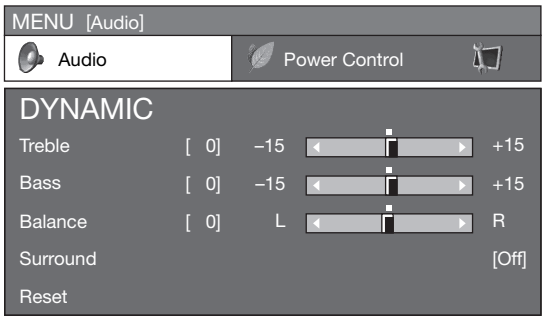
**Item**

**STANDARD:** For a highly defined image in a normally bright room.
**MOVIE:** For viewing a movie in a darkened room.
**GAME:** For playing of video games.
**PC*:** For PC.
**xvYCC**:** Produce realistic colour on the TV screen unlike any other signal.
**USER:** Allows the user to customise settings as desired. You can set the mode for each input source.
**DYNAMIC (Fixed):** For a clear-cut image emphasising high contrast for sports viewing. (The Picture and Audio settings cannot be adjusted.) Each setting value cannot be changed in this mode.
**DYNAMIC:** For a clear-cut image emphasising high contrast for sports viewing.

**NOTE**

- The item marked with * is available only when selecting "EXT4", "EXT5", "EXT6" or EXT7" from the INPUT SOURCE menu.
- The item marked with ** is available only when accepting an xvYCC signal through an HDMI terminal.

## Audio Settings




### Audio

## Audio adjustment

You can adjust the sound quality to your preference with the following settings.

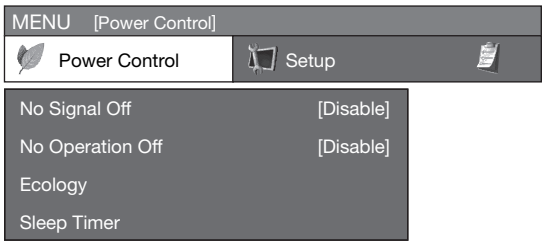
| Selectable items | ◀ button | ▶ button |
|---|---|---|
| **Treble** | For weaker treble | For stronger treble |
| **Bass** | For weaker bass | For stronger bass |
| **Balance** | Decrease audio from the right speaker | Decrease audio from the left speaker |

### Audio

## Surround

This function allows you to enjoy realistic "live" sound.

## Power Save Settings




### Power Control

## No Signal Off

When set to "Enable" the TV will automatically enter the standby mode if there is no signal input for 15 minutes.

- Five minutes before the TV enters standby mode, the remaining time displays every minute.

**NOTE**

- When a TV programme finishes, this function may not operate.

Power Control

## No Operation Off

The TV will automatically enter the standby mode if no operations are performed during the time span you set (“30min.” or “3hr.”).
- Five minutes before the TV enters standby mode, the remaining time displays every minute.

Power Control

## Ecology

When set to “Yes” the TV activates the following power saving mode.
- OPC set to “On” (Page 24)
- Standby Mode set to “Mode 2” (Page 32)
- No Signal Off set to “Enable” (Page 25)
- No Operation Off set to “3hr.” (Page 26)

Power Control

## Sleep Timer

Allows you to set a time when the TV automatically switches to standby.

**NOTE**
- Select “Off” to cancel the sleep timer.
- When the time has been set, countdown automatically starts.
- Five minutes before the preset of time expires, the remaining time displays each minute.

# Channel Settings

## Auto Installation

Setup

### Auto Installation

The TV automatically detects and stores all available services in your area. This function also allows you to perform the channel setting for “Digital” and “Analogue” individually and reconfigure the settings after the initial auto installation has been completed.

**1** After selecting “Yes” on the screen, you can set language and channel search the same as in the initial auto installation. Follow steps 2, 4 and 5 on page 9.

**NOTE**
- You cannot set the country setting in “Auto Installation” in the Setup menu. If you want to reconfigure the country setting, automatically execute initial auto installation after executing “Reset” from the Setup menu.
- The current country setting is displayed on the screen.

## Digital channel settings

Setup

### Programme Setup

#### Digital Setting

You can reconfigure DTV services settings automatically or manually.

**Additional Search**

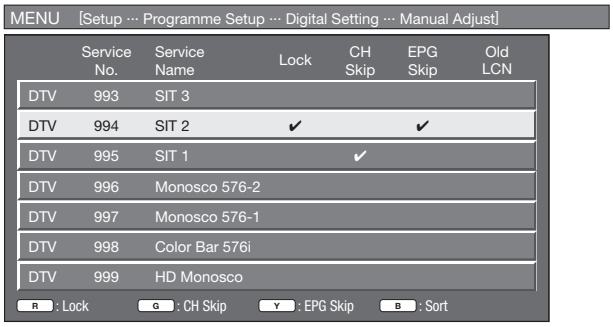
Use this menu to add new services automatically after auto installation has been completed.

**Manual Search**

Add new services within a specified frequency band.
- Enter the frequency using **0** - **9** numeric buttons.

**Manual Adjust**

Configure various settings for each service using the **Colour (R, G, Y, B)** buttons.




**1** Press ▲/▼ to select the desired service.

**2** Press the colour button on the remote control corresponding with the item you want to reconfigure.
- The ✔ mark indicates the operation is set to on. Each time the colour button is pressed, you can switch the corresponding operation on/off.

**Buttons for Manual Adjust operation**

**Lock: Press R button**.
When the service is locked, you must enter your PIN whenever you tune to the service.

**CH Skip: Press G button**.
Services with a ✔ mark are passed over when pressing **P**∧/∨ in the TV/remote control unit.

**EPG Skip: Press Y button**.
Services with a ✔ mark are passed over in the Electronic Programme Guide (EPG).

**Sort: Press B button**.
The item position of services can be sorted.

① Press ▲/▼ to select the service whose item position you want to move, and then press **OK**.

| | | | | |
|---|---|---|---|---|
| DTV | 994 | SIT 2 | ✔ | ✔ |
| DTV | 995 | SIT 1 | | ✔ |

② Press ▲/▼ to move it to the desired position, and then press **OK**.

| | | | | |
|---|---|---|---|---|
| DTV | 994 | SIT 1 | | ✔ |
| DTV | 995 | SIT 2 | ✔ | ✔ |

③ Repeat steps 1 and 2 until all desired service items are sorted.

# Analogue channel settings

Setup

## Programme Setup

### Analogue setting

You can reconfigure Analogue TV channels settings automatically or manually.

### Additional search

Use this menu to add new channels automatically after auto installation has been made.

- Start searching channels after selecting colour system and sound system.

### Manual Adjust

Use this menu to set up analogue TV channels manually.

After selecting “Yes” on the screen, press ▲/▼/◀/▶ to select the channel you want to set and the press **OK**.

#### Fine

You can adjust the frequency to the desired position.

**NOTE**

- Adjust while checking the background picture as a reference.
- Instead of pressing ◀/▶ to adjust the frequency, you can set by directly entering the frequency number of the channel with **0** - **9**.

**EXAMPLE**

- 179.25 MHz: Press **1** → **7** → **9** → **2** → **5**.
- 49.25 MHz: Press **4** → **9** → **2** → **5** → **OK**.

#### Colour sys.

Select the optimum colour system to receive. (Auto, PAL, SECAM)

#### Sound sys. (Broadcasting systems)

Select the optimum sound systems (Broadcasting systems) to receive. (B/G, D/K, I, L/L’)

#### Label

When a TV channel sends its Network Name, the Auto Installation detects the information and assigns a name to it. However, you can change individual channel names.

1 Press ▲/▼/◀/▶ to select each character of the new name for the channel, and then press **OK**.

2 Repeat step 1 above until the name is fully spelt out.

**NOTE**

- The name can be 5 characters or less.
- If a channel name is less than 5 characters, select “END” to set the channel name.

#### Skip

Channels with “Skip” set to “On” are passed over when using **P**⋀/**P**⋁ even if selected while watching the image from the TV.

#### Decoder

When connecting a decoder to the unit, you need to select EXT1 or EXT2.

**NOTE**

- “Off” is factory preset value.

#### Lock

You can block the viewing of any channel.

**NOTE**

- See “Child Lock” for setting a PIN.
- When Lock is set to “On” for a channel, “Child lock has been activated.” displays, and the image and sound of the channel are blocked.
- When pressing ⮌ while “Child lock has been activated.” displays, the PIN input menu will display. Inputting the correct PIN lifts the child lock temporarily until the power is turned off.

### Sort

Channel positions can be sorted freely.

1 Press ◀/▶ to select “Yes”, and then press **OK**.

2 Press ▲/▼/◀/▶ to select the channel you want to move, and then press **OK**.

3 Press ▲/▼/◀/▶ to move it to the desired position, and then press **OK**.

4 Repeat steps 3 and 4 until all desired channels are sorted.

### Erase Programme

An individual programme can be erased.

1 Press ◀/▶ to select “Yes”, and then press **OK**.

2 Press ▲/▼/◀/▶ to select the channel you want to erase, and then press **OK**.
- A message screen pops up.

3 Press ◀/▶ to select “Yes”, and then press **OK** to erase the selected programme. All the subsequent programmes move up.

4 Repeat steps 3 and 4 until all desired channels are erased.

## Password/Parental lock settings

Setup

### Child Lock

Allows you to use a PIN to protect certain settings from being accidentally changed.

#### Change PIN

Register a 4-digit password number to use the Child Lock function.

1 Enter the 4-digit number as a PIN using **0** – **9**.

2 Enter the same 4-digit number as in step 1 to confirm.
- "The system PIN has been changed successfully" displays.

**NOTE**
- To view a locked channel, you must enter the PIN. (See pages 26 and 27 for locking channels from viewing in analogue TV and DTV mode.) When you select a locked channel, a PIN prompt message pops up. Press ⮌ to display the PIN input window.

#### Cancel PIN

Allows you to reset your PIN.

**NOTE**
- **As a precautionary measure, make a note of your PIN on the back of this operation manual, cut it out and keep it in a safe place that children cannot reach.**

#### Parental rating

This function allows DTV services to be restricted. It prevents children from watching violent or sexual scenes that may be harmful.

**NOTE**
- "Universal viewing" and "Parental approval pref." are ratings used exclusively in France.
- Refer to page 44 for details about ratings.

Option

### Key Lock

This function allows you to lock the buttons on the TV or remote control in order to prohibit children from changing the channel or volume.

**Item**

**Off:** Unlock the buttons.
**RC Control Lock:** Lock all buttons on the remote control.
**Button Control Lock:** Lock the buttons except the power switch on the TV.

**NOTE**
- You cannot set both "RC Control Lock" and "Button Control Lock" at the same time.

#### Cancelling the lock

Press the **MENU** button on the TV and set to "Off" to cancel the "RC Control Lock". Press the **MENU** button on the remote control and set to "Off" to cancel the "Button Control Lock".
- Refer to page 23 for menu operation using **MENU** button on the TV.

## Language Settings (language, subtitle, multi audio)

Setup

### Language

You can select a OSD language from the Setup menu. Select from among 22 languages. (Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Russian, Slovak, Slovene, Spanish, Swedish, Turkish)

Digital Setup

### Subtitle

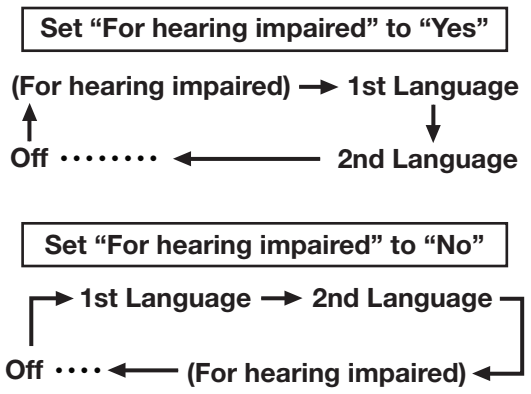
Set up to 2 preferred subtitle languages (including subtitles for the hearing impaired) to display if subtitles are available.

**Selectable items**

● **1st language** ● **2nd language**
● **For hearing impaired**

#### Switching subtitle languages

Each time you press 💬 on the remote control, the subtitle switches.




**NOTE**
- Subtitles will not be displayed when the service does not contain subtitle information.

Option

### Digital Audio Language

Set up to 3 preferred multi audio languages to display if the audio languages are available.

#### Switching the multi audio languages

Each time you press I/II/I+II on the remote control, the audio language switches.

# Useful Viewing functions

## Selecting the WSS picture size automatically

WSS allows a television to switch automatically among the different screen formats.

**NOTE**

- Use WIDE MODE if an image does not switch to the correct screen format. When the broadcast signal contains no WSS information, the function will not work even if enabled.

## Selecting the WSS picture size manually

The WSS signal has 4:3 auto-switching that allows you to select between Panorama and Normal.

**Item**

**Normal:** Normal range keeping 4:3 or 16:9 aspect ratio
**Panorama:** Wide image without side bars

**WSS signal 4:3 screen**

**4:3 mode “Normal”**

**4:3 mode “Panorama”**

## Selecting the picture size manually

You can select the picture size. Selectable picture size varies with the type of signal received.

Basically, if you set WSS to “On” in the Setup menu, the optimum Wide mode is automatically chosen for every broadcast. You can however, change the screen format manually as explained below.

**NOTE**

- Aside from manually changing the Wide modes as explained herein, the TV may detect and select the optimum Wide mode according to the signal received.

**1** Press ⇔.

- The WIDE MODE menu displays.
- The menu lists the wide mode options selectable for the type of video signal currently received.

**2** Press ⇔ or ▲/▼ while the WIDE MODE menu displays on the screen.

- As you toggle the options, each is immediately reflected on the screen. There is no need to press **OK**.

**Item (for SD [Standard] signals)**

**Normal:** Keeps the original aspect ratio in a full screen display.
**Zoom 14:9:** For 14:9 letterbox pictures. A thin side bar appears on each side, and you may also see bars on the top and bottom with some programmes
**Panorama:** In this mode the picture is progressively stretched toward each side of the screen.
**Full:** For 16:9 squeeze pictures.
**Cinema 16:9:** For 16:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.
**Cinema 14:9:** For 14:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.

**Item (for HD [High-Definition] signals)**

**Full:** Display with an Overscan image. Crops all sides of screen.
**Underscan:** Display with an Underscan image only when receiving a 720p signal. Display with the High-Definition image adjusted optimally. Noise may appear on the edge of the screen with some programmes.
**Dot by Dot:** Displays an image with the same number of pixels on the screen when receiving 1080i/1080p signals only.

**NOTE**

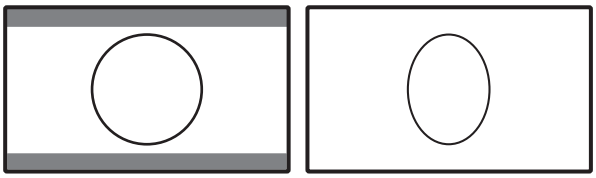
- Some items do not appear depending on the type of received signal.

## Selecting the recording picture size manually

Digital Setup
**REC Picture Size**

You can use this menu to set the appropriate picture size for viewing a 16:9 format TV programme on a 4:3 TV.

**Setting to “4:3 TV”** **Setting to “16:9 TV”**



**NOTE**
- This function must be set before recording.

## Selecting the HDMI picture size automatically

Setup
**HDMI Auto View**

This function allows you to automatically change to the appropriate picture size when viewing an HDMI signal using the EXT 4, 5 and 6 terminals.

# Other Picture and audio settings

## Adjusting image position

Setup
**Position**

For adjusting a picture’s horizontal and vertical position.

**Item**

**H-Pos.:** Centres the image by moving it to the left or right.
**V-Pos.:** Centres the image by moving it up or down.

**NOTE**
- Adjustments are stored separately according to input source.
- Depending on the input signal type or WIDE MODE setting, a position setting may not be available.

## Reducing noise on the screen

Option
**DNR**

DNR (Digital Noise Reduction) produces a clearer image. (Off, High, Low)

## Automatic volume adjustment

Option
**Auto Volume**

Different sound sources sometimes do not have the same volume level, such as a programme and its commercial breaks. The Automatic Volume Control (Auto Volume) reduces this problem by equalizing levels.

## Clear Voice

Option
**Clear Voice**

This function emphasises speech against background noise for greater intelligibility. It is not recommended for music sources.

## Audio Only

Option
**Audio Only**

When listening to music from a music programme, you can set the TV off and enjoy audio only.

**Item**

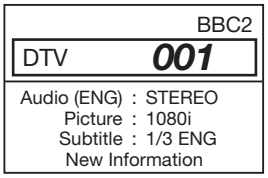
**Off:** Both screen images and audio are output.
**On:** Audio is output without a screen image.

# Display Settings

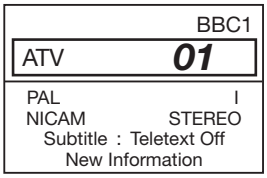
## Channel display

You can display the channel information pressing i+ on the remote control.

**DTV Mode**




**ATV Mode**




### Time display in channel information

You can display the time information included in DTV and Teletext broadcasts.

**NOTE**

• Skip step 1 if receiving DTV broadcasts.

1. Select a TV channel. (The time information is automatically captured.)
2. Press i+. The channel display will appear on the TV.
3. Press i+ again within the several seconds that the channel display is on the screen. Time information will display below the channel display for several seconds.
4. Even when you change the TV channel, you can display the time information with steps 2 and 3 above.

**NOTE**

• If acquired successfully, the time information will appear in the upper-right corner of the screen by pressing **MENU**.

## Time and Title display

**Option**

### Time Display

#### Time Display

This function allows you to display the clock time on the lower right screen.

**Item**

**On:** Display the clock time.
**On (half-hourly):** Display the clock time in 30 minutes increments.
**Off:** Hide the clock time.

#### Time Format

You can select the time format (either 24HR or AM/PM) for the clock time.

**Option**

### Game Play Time

This function allows you to display the elapsed time on the screen when AV MODE is set to “GAME”.

**Item**

**On:** Under connecting a game console to the TV, the elapsed time is displayed in 30-minute increments after you start playing a game.
**Off:** Hide the time.

**Option**

### Programme Title Display

This function allows you to display programme information on the screen including the title and airtime by tuning a channel.

# Other useful features

## Setting when using external devices

### Input source settings

**Option**

#### Input Select

For setting the signal type of external equipment.

**Item**

**EXT 1:** Y/C, CVBS, RGB
**EXT 2:** Y/C, CVBS, RGB
**EXT 3:** Auto, S-VIDEO, VIDEO

**NOTE**

- **If no (colour) image displays, try changing to another signal type.**
- Check the operation manual of the external equipment for the signal type.
- When the signal type is set to “Auto”, the input terminal where a cable is connected is automatically selected.

**Setup**

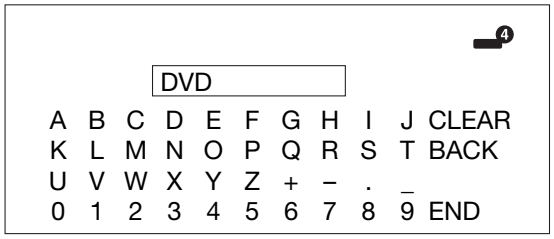
#### Input Label

You can assign each input source a label as you prefer.

**1** Press ⏎ to select the desired input source.

**2** Go to MENU> Setup> Input Label.

**3** Press ▲/▼/◀/▶ to select each character of the new name for the input source, and then press **OK**.




**4** Repeat until the name is fully spelt out.

**NOTE**

- The name can be 6 characters or less.
- When you want to set an input source name of less than 6 characters, select “END” to set the name.

**NOTE**

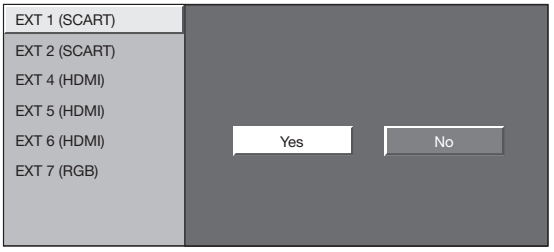
- You cannot change labels if the input source is TV.

### Skipping specified input

**Setup**

#### Input Skip

This setting allows you to skip the SCART, HDMI or RGB input on the “Input Select” menu.




### Colour system settings

**Option**

#### Colour System

You can change the colour system to one that is compatible with the image on the screen.

**NOTE**

- The factory preset value is “Auto”.
- If “Auto” is selected, the colour system for each channel is automatically set. If an image does not display clearly, select another colour system (e.g. PAL, SECAM).

## Additional features

**Setup**

#### Standby Mode

You can reduce the TV’s start-up time after turning on the power with the remote control unit.

**Item**

**Mode1:** The TV quickly starts up from standby. 30W or more of power consumption is required.
**Mode2:** Power consumption is small during standby.

**Setup**

#### Blue Illumination

The LED on the front of the TV is blue when illuminated.

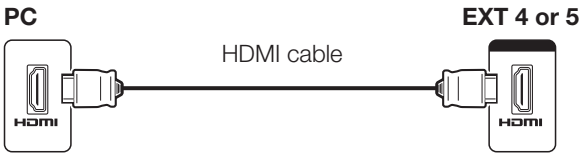
**NOTE**

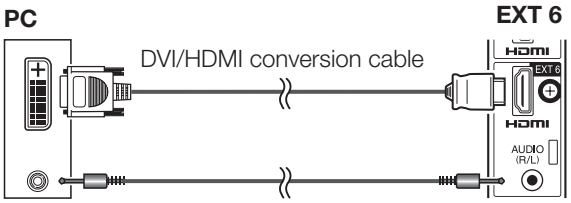
- The factory default setting is “On”.
  Set to “Off” if you do not want the LED to illuminate.

# Connecting a PC

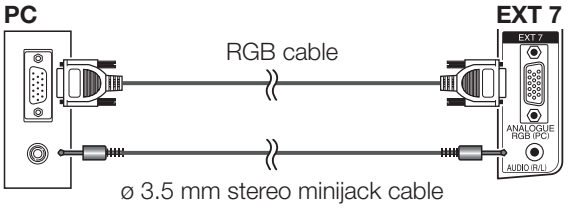
## Connecting a PC

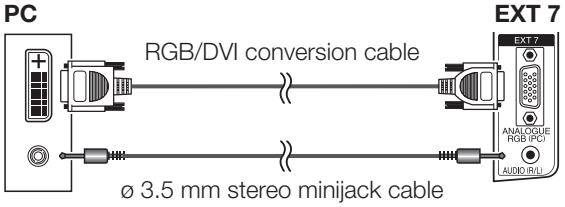
### HDMI Connection




### Analogue Connection




**NOTE**

- The PC input terminals are DDC1/2B-compatible.
- Refer to page 36 for a list of PC signals compatible with the TV.
- Macintosh adaptor may be required for use for some Macintosh computers.
- When connecting to a PC, the correct input signal type is automatically detected except 1024 × 768 and 1360 × 768 signals.

## Displaying a PC image on the screen

### Selecting the picture size

You can select the picture size.

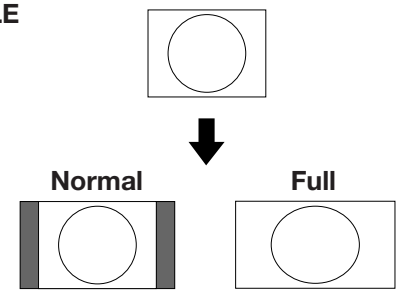
**1** Press ⇔.
- The WIDE MODE menu displays.

**2** Press ⇔ or ▲/▼ to select a desired item on the menu.

**NOTE**

- Connect the PC before making adjustments.
- Selectable picture size may vary with input signal type.

**EXAMPLE**




**Item**

**Full:** An image fully fills the screen.
**Cinema:** For letter box pictures. Bars may appear on the top and bottom with some programmes.
**Normal:** Keeps the original aspect ratio in a full screen display.
**Dot by Dot:** Displays an image with the same number of pixels on the screen.

**NOTE**

- Refer to page 29 for AV signals (480i/480p/576i/576p/720p/1080i/1080p). The analogue D-sub terminal (EXT7) is not compatible with 480i/576i/1080p signals.

## Adjusting the PC image automatically

This function enables the screen to be automatically adjusted to its best possible condition when the analogue terminals of the TV and PC are connected with a commercially available DVI/D-sub conversion cable, etc.

Setup

**Auto Sync.**

**NOTE**

- When “Auto Sync.” is successful, “Auto Sync completed successfully” displays. If not, “Auto Sync.” failed.
- “Auto Sync.” may fail even if “Auto Sync completed successfully” displays.
- “Auto Sync.” may fail if the computer image has low resolution, has unclear (black) edges, or is moved while executing “Auto Sync.”.
- Be sure to connect the PC to the TV and switch it on before starting “Auto Sync.”.
- “Auto Sync.” can be executed only when inputting analogue signals through the EXT 7 terminal.

## Adjusting the PC image manually

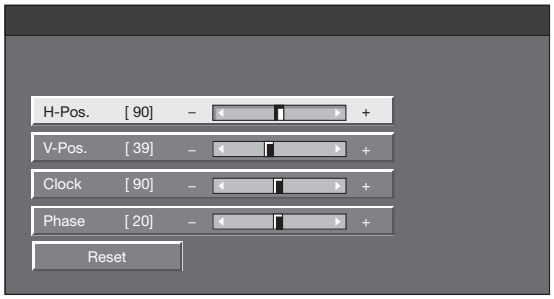
Ordinarily you can easily adjust the picture as necessary to change image position using Auto Sync. In some cases, however, manual adjustment is needed to optimise the image.

Setup

**Fine Sync.**

**1** Press ▲/▼ to select the specific adjustment item.

**2** Press ◀/▶ to adjust the item to the desired position.




**Item**

**H-Pos.:** Centres the image by moving it to the left or right.
**V-Pos.:** Centres the image by moving it up or down.
**Clock:** Adjusts when the image flickers with vertical stripes.
**Phase:** Adjusts when characters have low contrast or when the image flickers.

**NOTE**

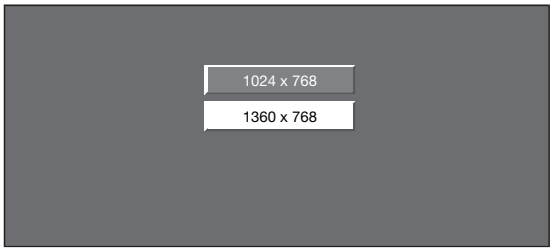
- For resetting all adjustment items to the factory preset values, press ▲/▼ to select “Reset”, and then press **OK**.
- “Clock” and “Phase” in the “Fine Sync.” menu can be adjusted only when inputting analogue signals.

## Selecting input resolution

- Some input signals may have to be registered manually to display properly.
- The pairs of input signals (resolutions) in the list below are not distinguishable when received. In such cases, you have to set the correct signal manually. After setting once, it will display when the same signal (resolution) is input again.

Setup

**Input Signal**




(Example)

**NOTE**

- You can only select the “Input Signal” on the Setup menu when receiving one of the 2 input signals listed above.

## RS-232C port specifications

### PC Control of the TV

- When a programme is set, the TV can be controlled from the PC using the RS-232C terminal. The input signal (PC/video) can be selected, the volume can be adjusted and various other adjustments and settings can be made, enabling automatic programmed playing.
- Use an RS-232C cable cross-type (commercially available) for the connections.

**NOTE**

- This operation system should be used by a person who is accustomed to using PCs.

RS-232C serial control cable
(cross type)

### Communication conditions

Set the RS-232C communications settings on the PC to match the TV's communications conditions. The TV's communications settings are as follows:

| | |
|---|---|
| **Baud rate:** | 9,600 bps |
| **Data length:** | 8 bits |
| **Parity bit:** | None |
| **Stop bit:** | 1 bit |
| **Flow control:** | None |

### Communication procedure

Send the control commands from the PC via the RS-232C connector.
The TV operates according to the received command and sends a response message to the PC.
Do not send multiple commands at the same time. Wait until the PC receives the OK response before sending the next command.
Make sure to send "A" with the carriage return and confirm that "ERR" returns before operating.

### Command format

Eight ASCII codes + CR

| C1 | C2 | C3 | C4 | P1 | P2 | P3 | P4 | ↵ |
|---|---|---|---|---|---|---|---|---|

Command 4-digits — Parameter 4-digits — Return code

Command 4-digits: Command. The text of four characters.
Parameter 4-digits: Parameter 0 – 9, blank, ?

### Parameter

Input the parameter values, aligning left, and fill with blank(s) for the remainder. (Be sure that four values are input for the parameter.)
When the input parameter is not within an adjustable range, "ERR" returns. (Refer to "Response code format".)

| | | | |
|---|---|---|---|
| 0 | | | |
| 0 | 0 | 0 | 9 |
| – | 3 | 0 | |
| 1 | 0 | 0 | |
| 0 | 0 | 5 | 5 |

When "?" is input for some commands, the present setting value responds.

| | | | |
|---|---|---|---|
| ? | | | |
| ? | ? | ? | ? |

### Response code format

Normal response

| O | K | ↵ |
|---|---|---|

Return code (0DH)

Problem response (communication error or incorrect command)

| E | R | R | ↵ |
|---|---|---|---|

Return code (0DH)

After sending the return code (0DH), make sure to send line feed (0AH) as well.

## PC compatibility chart

| Resolution | | Horizontal Frequency | Vertical Frequency | Analogue (D-Sub) | Digital (HDMI) | VESA Standard |
|---|---|---|---|---|---|---|
| VGA | 640 × 480 | 31.5 kHz | 60 Hz | ✔ | ✔ | ✔ |
| SVGA | 800 × 600 | 37.9 kHz | 60 Hz | ✔ | ✔ | ✔ |
| XGA | 1024 × 768 | 48.4 kHz | 60 Hz | ✔ | ✔ | ✔ |
| WXGA | 1360 × 768 | 47.7 kHz | 60 Hz | ✔ | ✔ | ✔ |
| SXGA | 1280 × 1024 | 64.0 kHz | 60 Hz | ✔ | ✔ | ✔ |
| SXGA+ | 1400 ×1050 | 65.3 kHz | 60 Hz | | ✔ | ✔ |

VGA, SVGA, XGA, WXGA, SXGA and SXGA+ are registered trademarks of International Business Machines Corporation.

**NOTE**

- This TV has only limited PC compatibility, correct operation can only be guaranteed if the video card conforms exactly to the VESA 60Hz standard. Any variations from this standard will result in picture distortions.

## RS-232C command list

| CONTROL ITEM | COMMAND | | | | PARAMETER | | | | CONTROL CONTENTS |
|---|---|---|---|---|---|---|---|---|---|
| POWER SETTING | P | O | W | R | 0 | _ | _ | _ | POWER OFF |
| INPUT SELECTION A | I | T | G | D | _ | _ | _ | _ | INPUT SWITCHING (TOGGLE) |
| | I | T | V | D | _ | _ | _ | _ | TV (CHANNEL FIXED) |
| | I | D | T | V | _ | _ | _ | _ | DTV (CHANNEL FIXED) |
| | I | A | V | D | * | _ | _ | _ | EXT1 – 8 (1 – 8) |
| CHANNEL | D | C | C | H | * | * | _ | _ | TV DIRECT CHANNEL (1 – 99) |
| | C | H | U | P | _ | _ | _ | _ | CHANNEL UP |
| | C | H | D | W | _ | _ | _ | _ | CHANNEL DOWN |
| | D | T | V | D | * | * | * | _ | DTV DIRECT CHANNEL (1 to 999) |
| | D | T | U | P | _ | _ | _ | _ | DTV CHANNEL UP |
| | D | T | D | W | _ | _ | _ | _ | DTV CHANNEL DOWN |
| INPUT SELECTION B | I | N | P | 1 | 0 | _ | _ | _ | EXT1 (Y/C) |
| | I | N | P | 1 | 1 | _ | _ | _ | EXT1 (CVBS) |
| | I | N | P | 1 | 2 | _ | _ | _ | EXT1 (RGB) |
| | I | N | P | 2 | 0 | _ | _ | _ | EXT2 (Y/C) |
| | I | N | P | 2 | 1 | _ | _ | _ | EXT2 (CVBS) |
| | I | N | P | 2 | 2 | _ | _ | _ | EXT2 (RGB) |
| | I | N | P | 3 | 0 | _ | _ | _ | EXT3 |
| | I | N | P | 3 | 1 | _ | _ | _ | EXT3 (S-VIDEO) |
| | I | N | P | 3 | 2 | _ | _ | _ | EXT3 (VIDEO) |
| AV MODE SELECTION | A | V | M | D | 0 | _ | _ | _ | TOGGLE |
| | A | V | M | D | 1 | _ | _ | _ | STANDARD |
| | A | V | M | D | 2 | _ | _ | _ | MOVIE |
| | A | V | M | D | 3 | _ | _ | _ | GAME |
| | A | V | M | D | 4 | _ | _ | _ | USER |
| | A | V | M | D | 5 | _ | _ | _ | DYNAMIC (Fixed) |
| | A | V | M | D | 6 | _ | _ | _ | DYNAMIC |
| | A | V | M | D | 7 | _ | _ | _ | PC |
| | A | V | M | D | 8 | _ | _ | _ | xvYCC |
| | A | V | M | D | ? | ? | ? | ? | 1 to 8 |
| VOLUME | V | O | L | M | * | * | _ | _ | VOLUME (0 – 60) |

| CONTROL ITEM | COMMAND | | | | PARAMETER | | | | CONTROL CONTENTS |
|---|---|---|---|---|---|---|---|---|---|
| POSITION | H | P | O | S | * | * | * | _ | H-POSITION (AV/PC) |
| | V | P | O | S | * | * | * | _ | V-POSITION (AV/PC) |
| | C | L | C | K | * | * | * | _ | CLOCK (0 - 180) |
| | P | H | S | E | * | * | _ | _ | PHASE (0 - 40) |
| WIDE MODE | W | I | D | E | 0 | _ | _ | _ | TOGGLE (AV) |
| | W | I | D | E | 1 | _ | _ | _ | NORMAL (AV) |
| | W | I | D | E | 2 | _ | _ | _ | ZOOM 14:9 (AV) |
| | W | I | D | E | 3 | _ | _ | _ | PANORAMA (AV) |
| | W | I | D | E | 4 | _ | _ | _ | FULL (AV) |
| | W | I | D | E | 5 | _ | _ | _ | CINEMA 16:9 (AV) |
| | W | I | D | E | 6 | _ | _ | _ | CINEMA 14:9 (AV) |
| | W | I | D | E | 7 | _ | _ | _ | NORMAL (PC) |
| | W | I | D | E | 8 | _ | _ | _ | CINEMA (PC) |
| | W | I | D | E | 9 | _ | _ | _ | FULL (PC) |
| | W | I | D | E | 1 | 0 | _ | _ | DOT by DOT (AV/PC) |
| | W | I | D | E | 1 | 1 | _ | _ | UNDERSCAN (AV) |
| MUTE | M | U | T | E | 0 | _ | _ | _ | TOGGLE |
| | M | U | T | E | 1 | _ | _ | _ | MUTE ON |
| | M | U | T | E | 2 | _ | _ | _ | MUTE OFF |
| SURROUND | A | C | S | U | 0 | _ | _ | _ | SURROUND TOGGLE |
| | A | C | S | U | 1 | _ | _ | _ | SURROUND ON |
| | A | C | S | U | 2 | _ | _ | _ | SURROUND OFF |
| AUDIO CHANGE | A | C | H | A | _ | _ | _ | _ | TOGGLE |
| SLEEP TIMER | O | F | T | M | 0 | _ | _ | _ | OFF |
| | O | F | T | M | 1 | _ | _ | _ | SLEEP TIMER 30 MIN |
| | O | F | T | M | 2 | _ | _ | _ | SLEEP TIMER 1 HOUR |
| | O | F | T | M | 3 | _ | _ | _ | SLEEP TIMER 1 HOUR 30 MIN |
| | O | F | T | M | 4 | _ | _ | _ | SLEEP TIMER 2 HOUR |
| | O | F | T | M | 5 | _ | _ | _ | SLEEP TIMER 2 HOUR 30 MIN |
| TEXT | T | E | X | T | 0 | _ | _ | _ | TEXT OFF |
| | T | E | X | T | 1 | _ | _ | _ | TEXT ON (TOGGLE) |
| | D | C | P | G | * | * | * | _ | DIRECT PAGE JUMP (100 – 899) |

# Appendix

## Troubleshooting

| Problem | Possible Solution |
|---|---|
| • No power. | • Check if you pressed **TV** ⏻ **|** on the remote control unit. If the indicator on the TV lights up red, press **TV** ⏻ **|**.<br>• Is the AC cord disconnected?<br>• Check if you pressed ⏻ on the TV. |
| • Unit cannot be operated. | • External influences such as lightning, static electricity, etc., may cause improper operation. In this case, operate the unit after first turning the power off, or unplugging the AC cord and re-plugging it in after 1 or 2 minutes. |
| • Remote control unit does not operate. | • Is the **FUNCTION** button set correctly? Set it to the TV setting position. (Page 38)<br>• Are batteries inserted with polarity (+, −) aligned?<br>• Are batteries worn out? (Replace with new batteries.)<br>• Are you using it under strong or fluorescent lighting?<br>• Is a fluorescent light illuminated onto the remote control sensor? |
| • Picture is cut off. | • Is the image position correct?<br>• Are screen mode adjustments (WIDE MODE) such as picture size made correctly? (Pages 29 and 33) |
| • Strange colour, light colour, or dark, or colour misalignment. | • Adjust the picture tone.<br>• Is the room too bright? The picture may look dark in a room that is too bright.<br>• Check the colour system setting. (Pages 27 and 32) |
| • Power is suddenly turned off. | • The unit's internal temperature has increased. Remove any objects blocking the vent or clean.<br>• Is the sleep timer set? Select "Off" from the "Sleep Timer" menu. (Page 26)<br>• Is "No signal off" activated? |
| • No picture. | • Are connections to external equipment correct? (Pages 15-17)<br>• Is the input signal type selected correctly after connection? (Page 32)<br>• Is the correct input source selected? (Page 10)<br>• Is a non-compatible signal being input? (Page 36)<br>• Is the picture adjustment correct? (Pages 24-25)<br>• Is the antenna connected properly? (Page 8)<br>• Is "On" selected in "Audio Only"? (Page 30) |
| • No sound. | • Is the volume too low?<br>• Make sure that headphones are not connected.<br>• Check if you pressed 🔇 on the remote control unit. |
| • The TV sometimes makes a cracking sound. | • This is not a malfunction. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the TV's performance. |

### Cautions regarding use in high and low temperature environments

- When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
- Do not leave the unit in a hot or cold location. Also, do not leave the unit in a location exposed to direct sunlight or near a heater, as this may cause the cabinet to deform and the LCD panel to malfunction.
  Storage temperature: +5°C to +35°C.

### Information on the software license for this product

**Software composition**

The software included in this product is comprised of various software components whose individual copyrights are held by SHARP or by third parties.

**Software developed by SHARP and open source software**

The copyrights for the software components and various relevant documents included with this product that were developed or written by SHARP are owned by SHARP and are protected by the Copyright Act, international treaties, and other relevant laws. This product also makes use of freely distributed software and software components whose copyrights are held by third parties. These include software components covered by a GNU General Public License (hereafter GPL), a GNU Lesser General Public License (hereafter LGPL) or other license agreement.

**Obtaining source code**

Some of the open source software licensors require the distributor to provide the source code with the executable software components. GPL and LGPL include similar requirements. For information on obtaining the source code for the open source software and for obtaining the GPL, LGPL, and other license agreement information, visit the following website:

http://www.sharp-eu.com/gpl/

We are unable to answer any questions about the source code for the open source software. The source code for the software components whose copyrights are held by SHARP is not distributed.

**Acknowledgements**

The following open source software components are included in this product:

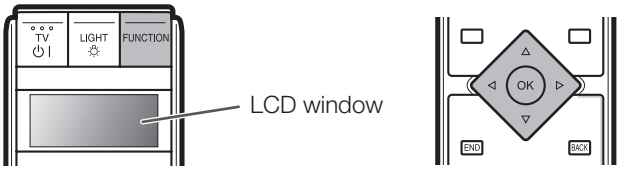
• linux kernel • modutils • glibc • zlib • libpng

## Using the universal remote control

You can operate connected AV products (DVD player/ recorder, SetTopBox, VCR and others) by setting up your remote control as a universal remote control unit.

**NOTE**

- Some manufacturer code indicated in the operational manual and the universal remote control device do not correspond. When recording a signal other than the signal being watched, some signals cannot be recorded depending on the signal being viewed.




### Presetting the manufacturer code

**1** Press **FUNCTION** repeatedly until you reach the device you wish to control. (TV, DVD1, DVD2, STB1, STB2 and VCR)

- Press this button briefly (for more than 0.2 seconds) to move between the items.

**2** Press and hold both **FUNCTION** and **OK** for 3 seconds.

- In the LCD window, the 3-digit manufacturer code input screen blinks.

**3** Enter the 3-digit manufacturer code using ▲/▼/◀/▶, and then press **OK**.

- The TV returns to the normal TV mode.

| LCD Window Display | Category | Manufacturer |
|---|---|---|
| DVD1/DVD2 | DVD player | Magnum - Zenith |
| | DVD recorder | JVC - Yukai |
| | DVD/LD | Pioneer |
| | DVD part of DVD/VCR | Bush - Toshiba |
| | DVD part of DVD/DVR | Panasonic - Toshiba |
| | HTIB* | Aiwa - Sony |
| | DVD part of SAT/DVD | Humax |
| | DVD part of TV/DVD | Bush - Toshiba |
| VCR | VCR part of DVD/VCR | Bush - Toshiba |
| | VCR part of TV/VCR | Aiwa - Toshiba |
| | VCR | Adelsound - Yoko |
| STB1/STB2** | SAT part of SAT/DVD | Humax |
| | SAT part of SAT-DVR | BSSkyB - Zehnder |
| | Satellite | AB Sat - Woorisat |
| | Satellite receiver | Hauppauge |
| | Satellite receiver/recorder | Humax - Kathrein |
| | Cable box | ABC - Wittenberg |

* Home Theatre in a Box System
** SAT and CBL are integrated

### Manufacturer code

| DVD | Manufacturer Code |
|---|---|
| Sharp | 029 128 143 177 191 |
| Magnum | 101 |
| Acoustic Solutions | 001 |
| Aiwa | 004 039 131 231 |
| Akai | 034 095 |
| Akura | 108 |
| Alba | 001 014 017 018 040 |
| Apex | 139 |
| Awa | 001 |
| Axion | 001 |
| Best Buy | 107 |
| Bosston | 152 |
| Brainwave | 034 |
| Brandt | 002 012 030 |
| Britannia | 150 |
| Bush | 001 019 032 042 045 087 092 102 106 149 158 209 223 224 225 226 |
| Cambridge Audio | 104 163 |
| CAT | 153 154 |
| Celestial | 161 |
| Centrex | 109 |
| Centrum | 154 |
| CGV | 104 |
| CineVision | 157 |
| Classic | 001 100 |
| Clatronic | 106 |
| Coby | 001 |
| Conia | 102 |
| Crypto | 159 |
| C-Tech | 105 |
| CyberHome | 003 022 025 036 |
| Daewoo | 023 038 078 113 114 115 |
| Dalton | 162 |
| Dansai | 034 151 227 |
| Daytek | 005 020 |
| DEC | 106 |
| Denon | 123 138 164 188 199 210 |
| Denver | 106 108 133 |
| Denzel | 103 |
| Desay | 155 |
| Diamond | 104 105 |
| Digitor | 160 |
| DK Digital | 032 176 |
| Dmtech | 111 |
| Dual | 001 103 |
| D-Vision | 034 |
| DVX | 105 |
| Easy Home | 107 |
| Eclipse | 104 |
| Elta | 034 124 134 |
| Emerson | 129 |
| Enzer | 103 |
| Euroline | 034 |
| Finlux | 104 |
| Fisher | 132 |
| Global Solutions | 105 |
| Global Sphere | 105 |
| Go Video | 126 |
| GoldStar | 015 |
| Goodmans | 001 014 018 045 106 109 158 203 228 |
| Graetz | 103 |
| Grundig | 018 038 099 109 127 |
| H&B | 106 156 |
| Haaz | 104 105 |
| Harmon/Kardon | 144 |
| HE | 001 |
| HiMAX | 107 |
| Hitachi | 011 047 088 101 103 107 126 190 196 206 215 |
| Home Electronics | 001 |
| Humax | 048 |
| Innovation | 096 101 128 |
| JDB | 001 |
| Jeutech | 152 |
| JVC | 002 016 080 081 082 083 084 085 120 173 182 184 212 |
| Kenwood | 037 123 142 170 208 211 219 229 |
| Kingavon | 106 |
| Kiss | 103 156 |
| Koda | 106 |
| KXD | 107 |
| Lawson | 105 |
| Lecson | 151 |
| Lenco | 106 |
| LG | 015 024 090 129 185 216 |
| Life | 096 128 |
| Lifetec | 096 101 128 |
| Limit | 105 |
| Loewe | 044 127 |
| LogicLab | 105 |
| Luxor | 109 |

| DVD | Manufacturer Code |
|---|---|
| Magnavox | 002 106 165 |
| Marantz | 049 098 200 201 |
| Matsui | 030 |
| MBO | 001 145 |
| Mediencom | 150 |
| Medion | 096 101 112 128 158 |
| Metz | 094 |
| MiCO | 104 |
| Micromaxx | 096 101 128 |
| Micromedia | 002 |
| Micromega | 171 |
| Microstar | 096 101 128 |
| Mirror | 158 |
| Mitsubishi | 125 166 |
| Mizuda | 106 107 |
| Monyka | 103 |
| Mustek | 001 100 198 |
| Mx Onda | 104 |
| NAD | 143 |
| Naiko | 109 |
| Nakamichi | 147 |
| Neufunk | 103 |
| NU-TEC | 102 |
| Omni | 150 |
| Onkyo | 002 097 165 |
| Optim | 151 |
| Optimus | 168 |
| Orava | 106 |
| Orion | 087 |
| Oritron | 096 |
| P&B | 106 |
| Pacific | 105 |
| Palsonic | 149 |
| Panasonic | 013 079 093 123 164 194 195 214 232 |
| Philips | 233 002 006 027 035 043 044 049 074 098 121 127 165 171 181 202 |
| Philips Magnavox | 121 |
| Pioneer | 007 008 010 046 094 168 174 178 183 207 220 |
| Proline | 109 |
| Provision | 106 |
| Raite | 103 |
| RCA | 135 |
| REC | 149 150 |
| RedStar | 108 |
| Reoc | 105 |
| Revoy | 156 |
| Roadstar | 001 014 106 149 |
| Rowa | 102 109 |
| Rownsonic | 154 |
| Saba | 012 030 |
| Sabaki | 105 |
| Sampo | 136 |
| Samsung | 011 076 077 126 175 186 213 217 |
| Sansui | 104 105 |
| Sanyo | 028 033 089 179 189 218 |
| ScanMagic | 001 |
| Schneider | 096 110 111 112 |
| Scientific Labs | 105 |
| Scott | 017 162 |
| SEG | 014 026 103 105 110 141 |
| Sherwood | 140 |
| Shinco | 135 |
| Sigmatek | 107 |
| Silva | 108 |
| Singer | 104 105 |
| Skymaster | 001 026 100 105 134 |
| Skyworth | 108 |
| SM Electronic | 001 105 |
| Sony | 004 009 021 031 041 075 122 169 180 204 205 221 222 |
| Soundmaster | 105 |
| Soundmax | 105 |
| Standard | 105 |
| Star Cluster | 105 |
| Starmedia | 106 |
| Supervision | 001 105 |
| Synn | 105 |
| TCM | 096 101 128 |
| Teac | 094 102 105 192 |
| Tec | 108 |
| Technics | 101 164 193 232 |
| Technika | 034 |
| Technosonic | 034 |
| Telefunken | 154 |
| Tevion | 096 101 105 128 162 |
| Thomson | 012 091 116 117 118 119 148 167 172 197 |
| Tokai | 103 108 |
| Toshiba | 002 086 087 121 165 187 |
| TruVision | 107 |

# Appendix

| DVD | Manufacturer Code |
|---|---|
| United | 001 |
| Voxson | 001 |
| Vtrek | 159 |
| Wharfedale | 104 105 130 |
| Wintel | 152 |
| Xbox | 167 |
| Xlogic | 105 |
| XMS | 149 |
| Yakumo | 109 |
| Yamada | 109 |
| Yamaha | 006 013 123 137 164 230 |
| Yamakawa | 103 146 |
| Yukai | 001 |
| Zenith | 002 129 165 |

| DVD Recorder | Manufacturer Code |
|---|---|
| JVC | 057 058 059 060 |
| LG | 065 |
| Panasonic | 052 062 |
| Philips | 050 051 053 061 063 064 |
| Sony | 054 055 056 |
| Toshiba | 067 068 069 |
| Yukai | 066 |

| DVD/LD | Manufacturer Code |
|---|---|
| Pioneer | 007 |

| DVD/VCR Combo | Manufacturer Code |
|---|---|
| Sharp | 029 (DVD)/028 032 (VCR) |
| Bush | 087 (DVD)/036 (VCR) |
| Daewoo | 078 (DVD)/029 (VCR) |
| Hitachi | 088 (DVD)/025 (VCR) |
| JVC | 080 081 082 083 084 085 (DVD)/ 007 025 033 034 (VCR) |
| LG | 015 (DVD)/014 030 (VCR) |
| Orion | 087 (DVD)/038 (VCR) |
| Panasonic | 079 (DVD)/031 037 (VCR) |
| Philips | 074 (DVD)/026 (VCR) |
| Samsung | 076 077 (DVD)/210 (VCR) |
| Sanyo | 089 (DVD)/039 (VCR) |
| Sony | 075 (DVD)/027 (VCR) |
| Toshiba | 086 (DVD)/035 (VCR) |

| DVD/DVR | Manufacturer Code |
|---|---|
| Panasonic | 052 062 |
| Pioneer | 070 071 072 |
| Samsung | 073 |
| Toshiba | 067 |

| HTIB | Manufacturer Code |
|---|---|
| Aiwa | 231 |
| DK Digital | 176 |
| Hitachi | 215 |
| JVC | 184 |
| Kenwood | 219 |
| LG | 216 |
| Mustek | 198 |
| Panasonic | 194 195 214 |
| Pioneer | 220 |
| Samsung | 213 |
| Sanyo | 189 218 |
| Sony | 205 221 222 |

| SAT/DVD | Manufacturer Code |
|---|---|
| Humax | 048 |

| TV/DVD Combo | Manufacturer Code |
|---|---|
| Bush | 092 |
| LG | 090 |
| Panasonic | 093 |
| Thomson | 091 |
| Toshiba | 087 |

| TV VCR combo | Manufacturer Code |
|---|---|
| Aiwa | 042 |
| Bush | 042 |
| Daewoo | 021 040 |
| GoldStar | 209 |
| Goodmans | 047 |
| Grundig | 041 |
| Orion | 045 |
| Philips | 041 046 |
| Roadstar | 042 045 |
| Samsung | 043 |
| Sony | 044 |
| Tatung | 042 |
| Toshiba | 042 043 045 048 |

| VCR | Manufacturer Code |
|---|---|
| Sharp | 001 015 028 032 063 064 073 089 149 150 151 153 165 |
| Adelsound | 056 |
| Adyson | 055 |
| Aiwa | 014 026 042 045 049 050 051 059 060 102 111 149 150 153 |
| Akai | 045 050 058 060 128 149 150 153 158 193 |
| Akiba | 055 |
| Akura | 050 055 060 |
| Alba | 021 026 045 051 052 055 058 061 128 129 130 |
| Allorgan | 043 126 |
| Ambassador | 052 058 |
| Amstrad | 026 049 055 061 149 162 189 |
| Anitech | 055 |
| Ansonic | 056 |
| ASA | 053 054 059 149 150 153 |
| Asuka | 026 049 053 054 055 059 149 |
| ASWO | 179 |
| Audiosonic | 061 |
| AudioTon | 058 |
| Baird | 021 026 049 050 060 061 123 154 |
| Basic Line | 021 051 052 055 058 061 |
| Bauer | 160 187 |
| Baur | 054 070 |
| Beaumark | 157 |
| Bestar | 021 052 058 061 |
| Black Panther Line | 021 061 |
| Blaupunkt | 006 008 054 057 069 070 071 083 119 124 125 149 150 151 153 171 179 |
| Blue Sky | 051 059 |
| Bondstec | 052 055 058 |
| Brandt | 009 060 132 |
| Brandt Electronique | 154 |
| Brinkmann | 051 |
| Broksonic | 155 157 |
| BSR | 188 |
| Bush | 021 026 036 042 045 051 055 061 075 127 128 129 130 |
| Carrefour | 121 |
| Casio | 026 |
| Cathay | 061 |
| Catron | 052 058 |
| CGE | 026 049 050 060 149 |
| Cimline | 051 055 |
| Clatronic | 052 055 058 |
| Combitech | 045 |
| Condor | 021 052 058 061 |
| Continental Edison | 154 |
| Crown | 021 052 055 058 061 |
| Curtis Mathes | 157 |
| Cybermaxx | 072 |
| Daewoo | 018 021 029 040 045 052 058 061 072 121 |
| Dansai | 055 061 |
| Dantax | 051 |
| Daytron | 021 061 |
| De Graaf | 054 |
| Decca | 007 026 049 050 054 060 |
| DeGraaf | 063 120 123 |
| Denko | 055 |
| Denon | 098 |
| Diamant | 059 209 |
| Dual | 026 050 054 060 061 154 |
| Dumont | 026 049 054 123 |
| Elbe | 061 |
| Elcatech | 055 |
| Elin | 067 126 |
| Elsay | 055 |
| Elta | 055 061 |
| Emerson | 055 121 155 |
| ESC | 021 058 061 126 |
| Etzuko | 055 |
| Europhon | 058 |
| Ferguson | 007 009 026 050 060 071 132 201 202 204 |
| Fidelity | 026 049 055 |
| Finlandia | 026 054 063 120 123 |
| Finlux | 026 049 050 054 080 120 123 149 150 153 197 207 |
| Firstline | 018 051 053 055 059 080 114 120 121 127 |
| Fisher | 058 122 123 149 150 153 159 178 |
| Flint | 051 |
| Formenti/Phoenix | 054 |
| Frontech | 052 058 |
| Fujitsu | 026 049 |
| Funai | 026 049 149 150 153 188 |
| Galaxy | 026 049 |
| GBC | 052 055 058 |
| GE | 157 |
| GEC | 054 |
| Geloso | 055 |
| General | 052 058 |
| General Technic | 006 043 051 |
| Genexxa | 123 |
| Go Video | 157 |
| GoldHand | 055 |
| GoldStar | 026 049 053 059 149 150 153 155 157 209 |
| Goodmans | 021 026 047 049 051 052 053 055 058 059 061 067 073 126 127 |
| Graetz | 050 060 123 126 |
| Granada | 026 054 057 059 063 071 120 123 126 |
| Grandin | 021 026 049 052 053 055 058 059 061 072 |
| Grundig | 009 041 054 055 057 069 070 071 074 075 076 090 125 149 150 153 173 179 181 182 187 |
| Hanseatic | 053 054 059 061 |
| Hantor | 058 |
| Harwood | 055 |
| HCM | 055 075 |
| Hinari | 045 051 055 056 060 061 075 127 |
| Hisawa | 045 051 166 |
| Hitachi | 005 016 019 026 049 050 054 056 060 098 115 120 123 126 149 150 153 175 185 |
| Hypson | 051 055 061 |
| Impego | 052 058 |
| Imperial | 026 049 126 149 |
| Ingersol | 056 126 |
| Inno Hit | 021 052 054 055 058 061 067 126 |
| Innovation | 006 043 051 |
| Interbuy | 053 055 059 |
| Interfunk | 054 123 |
| Intervision | 026 049 051 059 061 209 |
| Irradio | 053 055 059 |
| ITT | 050 060 077 123 126 |
| ITT Nokia | 154 |
| ITV | 021 053 058 059 061 |
| JBL | 147 |
| JC Penney | 098 155 157 |
| JVC | 007 025 033 034 050 060 077 078 079 098 105 106 140 149 150 153 154 161 200 204 |
| Kaisui | 055 |
| Karcher | 054 |
| Kendo | 018 021 051 052 055 059 128 |
| Kenwood | 050 060 |
| Kimari | 122 |
| Kneissel | 045 051 |
| Korpel | 055 |
| Kuba | 122 |
| Kyoto | 055 |
| Lenco | 021 |
| Leyco | 055 |
| LG | 010 014 024 026 030 049 053 059 112 |
| Lifetec | 006 043 051 072 |
| Loewe | 006 137 |
| Loewe Opta | 053 054 056 057 059 071 124 131 151 169 179 209 |
| Logik | 055 056 067 126 |
| Lumatron | 021 061 072 |
| Luxor | 055 063 073 080 114 122 123 149 150 153 180 195 |
| M Electronic | 026 049 059 |
| Magnin | 157 |
| Manesth | 018 055 121 |
| Marantz | 054 057 071 073 179 |
| Mark | 061 |
| Matsui | 026 045 051 053 056 059 126 133 162 164 |
| Mediator | 054 |
| Medion | 006 043 051 072 |
| M-Electronic | 026 059 209 |
| Memorex | 026 049 053 059 063 098 122 123 155 |
| Memphis | 055 |
| Metz | 006 008 057 070 071 124 125 131 179 181 187 |
| MGN | 157 |
| Micromaxx | 006 043 051 072 |
| Microstar | 006 043 051 072 |
| Migros | 026 049 |
| Minerva | 070 071 125 181 187 |
| Minolta | 098 |
| Mitsubishi | 007 049 054 080 107 114 149 150 153 155 170 199 |
| Multitech | 026 049 052 054 055 058 123 |
| Murphy | 026 049 |
| National | 006 069 124 |
| NEC | 007 050 060 154 155 177 |
| Neckermann | 050 054 057 060 154 179 |
| NEI | 054 |
| Nesco | 026 045 055 |
| Nikkai | 052 055 058 061 |
| Nokia | 050 060 061 063 067 120 123 126 128 180 195 |
| Nordmende | 007 009 050 060 077 124 134 149 150 153 154 161 201 204 205 |
| Oceanic | 026 049 050 060 063 123 |
| Okano | 051 055 061 128 |
| Optimus | 155 156 |
| Orion | 038 045 051 056 129 130 155 163 166 188 191 192 |
| Orson | 026 049 |
| Osaki | 026 049 053 055 059 |
| Osume | 127 |
| Otake | 129 130 |
| Otto Versand | 054 187 |
| Palladium | 050 053 055 056 057 059 060 071 126 128 |
| Panasonic | 002 006 008 023 031 037 069 086 091 101 124 131 137 149 150 151 153 155 167 169 171 174 190 198 |
| Pathe Cinema | 056 114 |
| Pathe Marconi | 050 060 154 |
| Pentax | 098 |
| Perdio | 026 049 |
| Philco | 055 098 |
| Philips | 005 011 017 019 020 026 041 046 054 057 062 065 071 076 077 087 090 092 093 095 100 104 108 110 136 149 150 153 179 |
| Phonola | 054 |
| Pioneer | 007 054 120 149 150 153 156 203 |
| Portland | 021 052 058 061 |
| Prinz | 026 049 |
| Profex | 055 |
| Profi-Tronic | 126 |
| Proline | 026 049 075 127 |
| Prosonic | 026 051 061 |
| Pulsar | 157 |
| Pye | 005 054 |
| Quasar | 155 |
| Quelle | 049 054 057 070 071 149 150 153 179 181 182 187 |
| Radialva | 055 059 063 |
| Radio Shack | 155 |
| Radiola | 054 151 |
| Realistic | 155 157 |
| Rex | 050 060 077 154 161 |
| RFT | 052 054 055 058 |
| Roadstar | 021 042 045 053 055 059 061 067 126 |
| Royal | 055 |
| Saba | 009 050 060 077 138 139 149 150 153 154 161 |
| Saisho | 051 055 056 162 |
| Salora | 080 114 123 149 150 153 180 |
| Samsung | 210 043 067 126 157 176 194 196 |
| Samurai | 007 052 055 060 |
| Sansui | 007 050 |
| Sanwa | 056 |
| Sanyo | 039 063 099 109 122 123 149 150 153 180 |
| Saville | 045 061 126 |
| SBR | 054 |
| Schaub Lorenz | 026 049 050 060 123 |
| Schneider | 018 021 026 049 051 052 053 054 055 059 061 126 149 150 153 |
| Scott | 155 |
| Sears | 098 155 |
| SEG | 055 061 067 126 |
| SEI-Sinudyne | 054 056 188 |
| Seleco | 050 058 059 060 154 161 |
| Sentra | 052 055 058 127 |
| Sentron | 055 |
| Shintom | 055 123 |
| Shivaki | 053 059 |
| Shorai | 056 |
| Siemens | 053 057 059 070 071 123 125 179 181 187 |
| Silva | 053 059 |
| Silver | 061 |
| Sinudyne | 054 056 |
| Solavox | 052 058 |
| Solovox | 058 |
| Sonitron | 122 |
| Sonneclair | 055 |
| Sonoko | 021 061 072 |
| Sonolor | 063 |
| Sontec | 053 059 |

# Appendix

| VCR | Manufacturer Code |
|---|---|
| Sony | 003 004 013 022 027 044 066 068 082 083 084 085 088 094 096 097 103 113 116 117 118 119 145 146 147 160 168 184 185 186 |
| Soundwave | 059 |
| Standard | 021 061 |
| Starlite | 059 123 |
| Stern | 061 |
| Sunkai | 051 |
| Sunstar | 026 049 |
| Suntronic | 026 049 |
| Sunwood | 055 |
| Supra | 059 126 |
| Symphonic | 026 055 |
| Taisho | 051 056 |
| Tandberg | 061 070 |
| Tansai | 149 |
| Tashiko | 026 049 059 063 126 |
| Tatung | 026 042 049 050 054 060 063 114 |
| TCM | 006 043 051 072 |
| Teac | 026 060 061 |
| Tec | 052 055 058 061 |
| Technics | 006 069 |
| Teleavia | 050 060 |
| Telefunken | 007 009 050 060 077 078 081 132 135 149 150 153 154 161 206 |
| Teletech | 055 061 |
| Tenosal | 055 |
| Tensai | 026 049 053 055 056 059 149 |
| Tevion | 006 043 051 072 |
| Thomson | 007 009 050 060 065 077 078 098 132 134 138 141 142 143 144 148 152 154 156 157 161 201 204 |
| Thorn | 050 059 060 123 154 161 208 |
| Tivo Hdd | 065 088 |
| Tokai | 053 055 059 060 123 149 |
| Tonsai | 055 |
| Toshiba | 012 018 035 042 043 045 048 050 054 060 077 080 114 121 154 162 172 |
| Towada | 055 183 |
| Towika | 055 |
| TVA | 052 058 |
| Uher | 053 059 126 154 |
| Ultravox | 061 |
| Unitech | 067 126 |
| United Quick Star | 021 061 |
| Universum | 026 049 051 053 054 057 059 070 071 076 125 126 |
| Victor | 007 078 |
| Videon | 006 043 051 |
| Wards | 155 157 |
| Weltblick | 053 059 |
| Yamishi | 055 |
| Yokan | 055 |
| Yoko | 052 053 055 058 059 067 126 |

| SAT/DVR | Manufacturer Code |
|---|---|
| Humax | 005 |
| BSkyB | 035 |
| Humax | 007 |
| TechniSat | 347 011 |
| Zehnder | 034 |

| Satellite | Manufacturer Code |
|---|---|
| AB Sat | 004 056 066 103 |
| AGS | 056 |
| Akai | 077 001 139 |
| Alba | 004 086 095 332 006 036 037 105 106 127 141 |
| Aldes | 080 086 003 105 106 107 |
| Allsat | 068 076 077 298 003 042 108 139 |
| Allsonic | 049 080 088 002 039 106 |
| Alltech | 004 097 |
| Alpha | 077 |
| Altai | 089 |
| Amitronica | 004 |
| Ampere | 045 089 001 109 |
| Amstrad | 004 008 045 050 060 061 079 084 089 098 099 101 165 279 282 292 295 305 313 331 002 038 140 |
| Anglo | 004 |
| Ankaro | 004 049 078 080 088 286 305 313 331 002 039 106 |
| Anttron | 076 095 334 002 036 106 |
| Arcon | 045 078 337 003 109 110 123 |
| Armstrong | 077 001 038 |
| ASA | 090 |
| Asat | 077 001 139 |
| ASLF | 004 |
| AST | 082 288 001 114 |
| Astacom | 056 161 |
| Astra | 004 053 071 085 093 288 005 038 111 112 113 133 |
| Astro | 020 022 048 049 050 053 088 095 159 004 039 040 106 107 |
| AudioTon | 095 002 042 106 |
| Aurora | 059 |
| Austar | 059 065 |
| Avalon | 089 |
| Axiel | 056 |
| Axis | 049 087 088 093 003 039 113 119 |
| Barcom | 305 313 331 001 110 |
| Best | 049 088 002 039 110 |
| Blaupunkt | 020 022 001 040 |
| Blue Sky | 004 061 |
| Boca | 004 045 094 160 177 180 192 197 204 207 208 216 223 250 260 269 002 038 133 |
| Boston | 045 056 |
| Brain Wave | 078 083 001 041 |
| Broadcast | 085 001 117 |
| Broco | 004 093 |
| BSkyB | 008 165 |
| BT | 056 |
| BT Satellite | 161 001 143 |
| Bubu Sat | 004 |
| Bush | 068 076 086 005 037 108 118 127 141 |
| BVV | 078 |
| Cable | 296 |
| Cambridge | 050 160 305 313 331 |
| Canal Satellite | 048 081 166 |
| Canal+ | 048 001 142 |
| Channel Master | 086 001 105 |
| Chaparral | 305 313 322 331 001 136 |
| CHEROKEE | 056 066 285 |
| Chess | 004 047 052 001 147 |
| CityCom | 044 053 057 065 002 037 120 294 |
| Clatronic | 083 001 041 |
| Clearmax | 275 |
| Colombia | 045 |
| Columbia | 045 |
| COLUMBUS | 285 001 125 |
| Comag | 045 |
| Commander | 078 |
| Commlink | 080 001 106 |
| Comtec | 080 087 |
| Condor | 049 053 088 001 039 |
| Connexions | 049 088 089 001 116 |
| Conrad | 044 045 049 050 053 088 094 156 |
| Conrad Electronic | 004 053 |
| Contec | 087 094 002 119 120 |
| Daewoo | 002 004 |
| Dansat | 068 076 001 108 |
| D-Box | 168 |
| DDC | 086 001 105 |
| Dew | 087 001 119 |
| Digiality | 053 |
| Digipro | 062 |
| Discoverer | 047 052 |
| Discovery | 056 |
| Diseqc | 056 |
| Distratel | 061 |
| Distrisat | 077 |
| DNR | 078 |
| DNT | 077 089 002 116 139 |
| Drake | 305 307 313 331 001 123 |
| DStv | 059 |
| Dune | 049 088 |
| Dynasat | 055 |
| Echostar | 004 066 089 166 167 238 241 245 273 274 276 285 290 305 310 313 325 330 331 002 116 147 |
| Einhell | 004 045 050 079 080 003 036 038 106 |
| Elap | 004 056 |
| Elsat | 004 099 |
| Elta | 049 077 088 298 332 004 036 039 042 139 |
| EmmeEsse | 049 055 088 167 003 039 118 129 312 |
| Engel | 004 |
| EURIEULT | 046 060 061 274 |
| Eurocrypt | 071 |
| Europa | 050 053 077 078 094 |
| Europhon | 045 053 |
| Eurosat | 298 001 038 |
| Eurosky | 044 045 049 050 053 088 002 038 039 |
| Eurostar | 044 053 055 057 104 001 038 |
| Eutelsat | 004 |
| Eutra | 097 |
| Exator | 095 002 036 106 |
| Fenner | 004 047 049 052 |
| Ferguson | 068 076 158 327 328 335 336 004 037 043 108 118 |
| Fidelity | 050 079 098 |
| Finlandia | 071 001 037 |
| Finlux | 071 091 156 329 340 003 037 111 126 |
| Flair Mate | 004 |
| Foxtel | 059 064 065 |
| Fracarro | 167 305 313 331 334 001 141 |
| Freecom | 022 050 002 036 128 |
| Freesat | 060 097 |
| FTE | 088 094 160 291 308 337 002 109 130 |
| FTEmaximal | 004 049 |
| Fuba | 022 044 049 071 088 089 274 285 300 334 009 036 039 040 110 112 116 125 126 139 |
| Fugionkyo | 062 |
| Funai | 323 |
| Galaxis | 044 049 059 065 080 087 088 093 144 289 298 326 008 039 042 106 113 119 127 145 246 |
| Galaxisat | 082 |
| Gardiner | 057 |
| Giucar Record | 305 313 331 |
| Goldbox | 048 081 166 |
| Gooding | 051 |
| Granada | 071 001 111 |
| Grandin | 046 069 |
| Grundig | 008 020 022 050 051 059 061 074 084 162 164 165 236 237 240 297 305 313 331 006 037 040 106 118 140 |
| G-Sat | 076 |
| Hanseatic | 052 157 001 135 |
| Hänsel & Gretel | 045 053 |
| Hantor | 083 003 036 041 132 |
| Hase & Igel | 078 |
| Heliocom | 053 001 109 |
| Helium | 053 |
| Hinari | 076 086 001 105 |
| Hirschmann | 020 021 022 049 050 053 056 060 089 090 092 153 156 340 002 040 129 |
| Hisawa | 083 001 041 |
| HNE | 045 |
| Houstion | 078 |
| Humax | 005 007 017 065 144 272 001 |
| Huth | 045 053 063 078 080 083 085 087 094 007 038 041 042 106 117 119 129 |
| Hypson | 046 274 |
| ID Digital | 065 |
| Imex | 046 |
| Ingelen | 060 |
| International | 045 |
| Interstar | 062 |
| Intervision | 053 096 001 042 |
| ITT/Nokia | 071 090 156 168 |
| JEEMON | 298 305 313 331 |
| Johansson | 083 305 313 324 331 001 041 |
| JOK | 056 100 161 |
| JVC | 051 |
| Kamm | 004 |
| Kathrein | 003 004 005 010 015 016 020 022 044 056 057 066 077 092 095 159 169 287 288 305 308 313 331 040 120 130 136 139 |
| Kathrein Eurostar | 044 |
| Key West | 045 |
| Klap | 056 |
| Konig | 053 329 |
| Kosmos | 092 308 003 128 129 130 |
| KR | 095 097 001 106 |
| Kreiselmeyer | 020 022 001 040 |
| K-SAT | 004 |
| Kyostar | 045 095 001 036 |
| L&S Electronic | 045 049 |
| Lasat | 044 045 047 049 053 087 088 160 005 039 107 131 132 133 |
| Lemon | 078 |
| Lenco | 004 044 049 053 078 088 093 334 003 036 128 134 |
| Lenson | 050 001 050 |
| Lexus | 077 |
| Lifesat | 004 045 047 049 052 088 157 005 039 135 145 147 150 |
| Lorenzen | 045 053 078 101 |
| Lupus | 049 088 001 039 |
| Luxor | 050 071 084 156 168 288 305 306 313 331 001 111 |
| M & B | 052 157 |
| Manata | 004 045 046 056 161 |
| Manhattan | 056 161 298 004 037 042 107 118 |
| Mascom | 092 001 107 |
| Maspro | 004 020 022 051 070 078 097 162 288 305 313 331 003 037 118 136 |
| Matsui | 020 022 051 056 086 161 346 001 143 |
| Max | 053 |
| MB | 052 157 001 135 |
| Mediabox | 048 081 166 |
| Mediasat | 048 050 081 093 166 001 113 |
| Medion | 004 045 049 088 005 039 135 145 147 150 |
| Medison | 004 |
| Mega | 077 001 139 |
| Melectronic | 057 |
| Memphis | 322 |
| Metronic | 004 046 057 061 069 080 095 036 106 107 110 |
| Metz | 020 022 297 001 040 |
| Micro | 004 050 053 |
| Micro electronic | 004 |
| Micro Technology | 004 093 001 124 |
| Micromaxx | 049 005 039 135 145 147 150 |
| Microtec | 004 |
| Minerva | 051 297 001 040 |
| MNet | 296 |
| Morgan's | 004 045 077 094 160 003 038 133 139 |
| Motorola | 058 |
| Multichoice | 059 001 059 |
| Multistar | 308 002 130 132 |
| Multitec | 047 001 147 |
| Muratto | 082 002 115 128 |
| Mysat | 004 |
| Navex | 083 001 041 |
| NEC | 075 001 137 |
| Network | 076 |
| Neuhaus | 004 050 053 078 093 094 003 042 113 |
| Neusat | 004 078 |
| NextWave | 063 |
| Nikko | 004 001 038 |
| Nokia | 012 013 023 071 090 156 168 176 188 190 196 210 211 214 219 221 224 227 247 249 253 257 268 271 280 281 283 288 340 005 037 111 118 171 |
| Nordmende | 083 086 158 333 334 335 336 005 036 037 043 105 107 |
| Nova | 059 |
| Novis | 083 001 041 |
| Octagon | 078 087 095 334 003 036 106 119 |
| Okano | 308 003 038 129 130 |
| Ondigital | 032 072 073 |
| Optex | 274 298 002 042 120 |
| Optus | 048 059 063 |
| Orbitech | 047 048 050 094 154 155 001 036 |
| Osat | 084 001 106 |
| Pace | 008 027 032 056 066 068 076 163 165 239 240 242 243 277 284 305 313 331 332 006 037 040 108 118 127 140 |
| Packsat | 056 |
| Palcom | 086 285 305 313 331 004 050 105 112 125 |
| Palladium | 050 051 001 038 |
| Palsat | 047 050 291 |
| Panasat | 054 059 |
| Panasonic | 001 008 165 003 037 118 140 |
| Panda | 022 053 068 071 002 037 108 |
| Patriot | 045 056 |
| Philips | 011 020 022 048 051 056 057 072 073 076 077 078 081 094 095 161 162 164 166 169 235 240 242 004 037 118 139 170 |
| Phoenix | 076 087 002 119 127 |
| Phonotrend | 080 144 004 037 042 106 129 |
| Pioneer | 048 166 315 |
| Predki | 083 001 041 |
| Preisner | 045 089 094 160 |
| Premier | 048 |
| Premiere | 048 065 081 166 183 210 211 217 227 271 002 042 142 |
| Profile | 056 |
| Prosat | 080 086 096 305 313 331 004 105 106 127 141 |
| Prosonic | 101 |

# Appendix

| Satellite | Manufacturer Code |
|---|---|
| Pye | 051 |
| Quadral | 049 056 066 080 086 088 094 096 161 311 341 342 343 344 003 039 105 106 |
| Quelle | 044 053 079 001 040 |
| Radiola | 077 001 139 |
| Radix | 009 060 089 097 116 203 213 256 003 172 174 |
| Rainbow | 095 097 001 106 |
| Red Star | 049 088 |
| Redpoint | 093 001 113 |
| Rex | 334 |
| RFT | 077 078 080 154 002 106 139 |
| RITAR | 288 |
| Roadstar | 004 |
| Roch | 046 |
| Rover | 004 049 096 |
| Saba | 044 053 056 061 076 078 100 158 161 333 339 004 107 118 124 141 |
| Sagem | 102 001 043 |
| Sakura | 087 305 313 331 002 119 127 |
| Salora | 071 288 306 002 111 137 |
| Samsung | 006 019 275 308 314 001 036 |
| SAT | 050 082 098 003 105 114 115 |
| Sat Cruiser | 063 |
| Sat Partner | 050 |
| Sat Team | 004 |
| Satcom | 052 053 085 157 309 334 002 117 135 |
| Satec | 004 076 001 118 |
| Satelco | 049 088 |
| Satford | 085 001 117 |
| Satline | 096 |
| Satmaster | 085 001 117 |
| SatPartner | 083 006 036 041 106 107 128 129 |
| Satplus | 047 |
| Schacke | 095 |
| Schneider | 047 056 164 004 039 145 147 150 |
| Schwaiger | 045 047 052 053 061 076 094 157 006 120 122 135 144 146 246 |
| SCS | 044 |
| Sedea Electronique | 045 062 |
| Seemann | 088 093 003 038 113 116 |
| SEG | 049 052 083 088 101 157 184 186 189 199 206 215 225 258 261 263 334 004 036 039 041 135 |
| Seleco | 167 334 001 042 |
| Septimo | 061 |
| Servi Sat | 004 046 |
| Siemens | 020 022 160 294 297 001 040 |
| Skantin | 004 |
| Skardin | 093 001 113 |
| Skinsat | 050 |
| SKR | 004 |
| SKY | 058 |
| Skymaster | 004 014 034 047 052 080 096 104 157 182 199 202 205 212 223 229 262 267 003 106 135 147 |
| Skymax | 077 001 139 |
| SkySat | 004 047 050 052 053 335 |
| SL | 045 078 |
| SM Electronic | 004 047 |
| Smart | 004 044 045 060 |
| Sony | 048 244 001 140 |
| SR | 045 002 038 133 |
| Starland | 004 001 147 |
| Starring | 083 001 041 |
| Strong | 049 059 062 088 186 187 189 193 198 201 210 216 227 228 248 270 291 299 305 312 313 331 005 036 039 106 128 141 |
| STVI | 046 274 |
| Sunny Sound | 049 088 |
| Sunsat | 004 093 |
| Sunstar | 045 049 088 002 038 133 |
| Super Sat | 055 |
| Supermax | 063 |
| Systec | 045 |
| Tandberg | 285 001 043 |
| Techniland | 085 001 117 |
| TechniSat | 347 011 047 048 050 067 077 154 155 173 175 179 181 191 194 195 220 251 259 264 301 302 345 004 116 |
| Technology | 059 |
| Technosat | 063 |
| Technowelt | 045 053 061 |
| Telanor | 285 300 001 105 |

| Satellite | Manufacturer Code |
|---|---|
| Telasat | 044 052 053 157 001 135 |
| Tele Piu | 296 |
| Teleciel | 095 |
| Telecom | 004 |
| Teledirekt | 076 |
| Telefunken | 056 161 334 338 003 036 118 143 |
| Teleka | 050 053 078 089 092 095 162 003 038 106 116 |
| Telesat | 052 053 157 001 135 |
| Telestar | 047 048 050 001 |
| Teletech | 104 |
| Televes | 045 050 002 037 149 |
| Tempo | 063 |
| Tensai | 303 |
| Tevion | 004 005 039 135 145 147 150 |
| Thomson | 004 024 026 028 030 031 044 048 053 056 081 158 230 231 232 233 234 242 335 037 043 143 |
| Thorn | 305 313 331 003 037 108 118 |
| Tioko | 045 001 120 |
| Tokai | 077 |
| Tonna | 004 050 085 003 037 042 117 |
| Triad | 082 003 114 115 128 |
| Triasat | 050 091 001 126 |
| Triax | 004 044 045 050 091 316 317 318 319 320 002 040 |
| Tristar | 291 |
| Turnsat | 004 |
| Twinner | 004 045 046 001 149 |
| UEC | 059 064 |
| Uher | 047 |
| Ultravox | 298 |
| Uniden | 098 278 293 305 313 331 001 138 |
| Unisat | 045 077 087 002 038 119 |
| Universum | 020 022 044 051 053 090 098 101 001 040 |
| Variosat | 020 022 |
| Vega | 049 |
| Ventana | 077 001 139 |
| Vestel | 101 |
| Viasat | 066 |
| Visionic | 062 |
| Visiosat | 004 056 100 041 042 147 148 |
| Viva | 078 |
| Vivid | 064 |
| Vortec | 032 321 334 001 036 |
| VTech | 057 001 115 082 100 114 |
| Wela | 094 |
| Welltech | 047 |
| WeTeKom | 047 050 052 |
| Winersat | 083 305 313 324 331 001 041 |
| Wintergarten | 080 |
| WINTERNITZ | 279 288 |
| Wisi | 020 022 050 053 082 089 094 100 116 178 185 190 191 197 200 209 218 219 220 222 226 252 254 255 256 265 266 318 005 037 040 114 115 |
| World | 083 |
| Worldsat | 056 |
| Xrypton | 049 088 |
| XSat | 004 066 |
| Zaunkonig | 078 |
| Zehnder | 025 044 049 057 082 088 101 304 308 318 005 039 107 110 115 130 |
| Zenith | 058 |
| Zinwell | 065 |
| Zodiac | 095 001 106 |
| Cabletime | 305 313 331 |
| Kenwood | 305 313 331 |
| Apollo | 036 |
| Aston | 148 |
| Brandt | 143 |
| Clemens Kamphus | 129 |
| CNT | 107 |
| Comtech | 119 |
| Cosat | 042 |
| Crown | 038 |
| Cybermaxx | 150 |
| Daeryung | 116 |
| Decca | 121 |
| Delega | 105 |
| Diamond | 122 |
| Diskxpress | 110 |
| Ditristrad | 042 |
| Dong Woo | 132 |
| Elekta | 107 |
| Emanon | 036 |
| Ep Sat | 037 |
| Eurodec | 043 |

| Satellite | Manufacturer Code |
|---|---|
| Eurospace | 124 |
| Finnsat | 043 119 |
| France Satellite/TV | 125 |
| Galaxi | 110 |
| GMI | 038 |
| GoldStar | 128 |
| Goodmans | 037 127 |
| Grothusen | 036 128 |
| Hanuri | 107 |
| Hitachi | 037 118 |
| Houston | 042 |
| Imperial | 127 141 |
| Innovation | 039 135 145 147 150 |
| Intertronic | 038 |
| ITT Nokia | 037 111 118 |
| JSR | 042 |
| Leng | 041 |
| Lennox | 042 |
| LG | 128 |
| Life | 145 |
| Lifetec | 039 135 145 147 150 |
| Lion | 124 |
| Lorraine | 128 |
| Lyonnaise | 043 |
| Macab | 043 |
| Marantz | 139 |
| Mediamarkt | 038 |
| Microstar | 039 135 145 147 150 |
| Mitsubishi | 037 040 143 |
| Mitsumi | 133 |
| Morgan Sydney | 149 |
| Next Wave | 146 |
| Nomex | 151 |
| Oceanic | 122 124 |
| Orbit | 114 |
| Origo | 124 |
| Otto Versand | 040 |
| Pacific | 122 |
| Paltec | 112 |
| Polsat | 043 |
| Polytron | 120 |
| Priesner | 038 |
| Profi | 134 |
| Promax | 037 |
| Protek | 122 |
| Provision | 107 |
| Quiero | 043 |
| Rediffusion | 137 |
| Redstar | 039 |
| Ruefach | 134 |
| Sabre | 037 |
| Silva | 128 |
| Sky Digital | 140 |
| Skyvision | 042 |
| Start Trak | 036 |
| Sumida | 038 |
| Tandy | 106 |
| Tantec | 037 050 118 125 |
| Tatung | 121 |
| TCM | 039 135 145 147 150 |
| Teco | 038 133 |
| Telemaster | 107 |
| Telemax | 131 |
| Telewire | 042 |
| Thorens | 122 |
| TPS | 102 |
| Unitor | 041 110 |
| Variostat | 040 |
| Vector | 124 |
| Via Digital | 024 |
| Vivanco | 152 |
| Wevasat | 037 |
| Wewa | 037 |
| Woorisat | 107 |

| Satellite Reciever | Manufacturer Code |
|---|---|
| Hauppauge | 018 029 |

| Satellite Reciever/ Recorder | Manufacturer Code |
|---|---|
| Humax | 005 |
| Kathrein | 033 |

| Cable Box | Manufacturer Code |
|---|---|
| ABC | 375 |
| Alcatel | 373 374 |
| Amstrad | 378 380 |
| Arcon | 380 |
| Axis | 380 |
| Cabletime | 348 349 350 366 368 370 |
| Clyde Cablevision | 351 |
| Comcrypt | 376 |

| Cable Box | Manufacturer Code |
|---|---|
| Cryptovision | 352 |
| Fidelity | 380 |
| Filmnet | 376 |
| Filmnet Cablecrypt | 353 369 |
| Filmnet Comcrypt | 353 |
| Finlux | 355 |
| Foxtel | 378 |
| France Telecom | 371 372 377 |
| Freebox | 379 |
| GEC | 351 |
| General Instrument | 367 375 |
| Gooding | 354 |
| Grundig | 380 354 |
| Hirschmann | 355 |
| ITT Nokia | 355 |
| Jerrold | 356 362 364 367 375 |
| JVC | 354 |
| Macab | 372 377 |
| Maspro | 354 |
| Matsui | 354 |
| Minerva | 354 |
| Mnet | 369 376 |
| Movie Time | 361 |
| Mr Zapp | 377 |
| Multichoice | 376 |
| Nokia | 355 |
| Noos | 377 |
| Palladium | 354 |
| Philips | 354 363 371 372 377 |
| Pioneer | 380 357 358 |
| PVP Stereo Visual Matrix | 364 |
| Sagem | 372 377 |
| SAT | 380 |
| Scientific Atlanta | 359 360 |
| Starcom | 375 |
| Tele+1 | 353 369 376 |
| Telepiu | 369 376 |
| Torx | 375 |
| United Cable | 364 |
| Universum | 354 355 |
| Videoway | 365 |
| Visiopass | 355 371 372 377 |
| Wittenberg | 380 |

| SAT/DVD | Manufacturer Code |
|---|---|
| Humax | 005 (SAT)/048 (DVD) |

## Updating your TV via DVB-T

To ensure that your TV software version is always up to date, from time to time SHARP will make updated TV base software and DVB software available.

Digital Setup

### Download Setup

#### Searching for updates*

* The country except UK and Sweden is set to “Yes” on this function.

The TV automatically determines whether a new software version is available when the TV is in standby mode.

**Item**

**Yes:** Search automatically if there is software available for update when the TV is in standby mode.
**No:** Do not search for update information.
**Now:** Check whether or not there is a new software immediately.

**NOTE**

- The TV must remain in standby mode for download. Do not switch off the TV with the main power switch.
- Updating the software may take some time.

#### Downloading the software

If the software is updated, the confirmation message “New download information has been detected.” appears. You can select the method of update.

**1** When you tune to the service that provides the update, a confirmation message displays.

**2** Follow the screen prompts.

**Item**

**Yes:** Start downloading immediately. It takes approximately one hour to update. You cannot carry out other operations while downloading.
**No:** Start downloading automatically several minutes after entering standby mode. The Timer settings will be executed.
- Cancel the download by pressing **OK** on the remote control when displaying “Discontinue” on the screen during the update.

Information

### Message List

When software is detected in the “Download Setup” menu and “No” is selected, you can update the software from the “Message List” menu.

Press ◀/▶ to select “Yes” after confirming the message, and then press **OK**.

**NOTE**

- When the TV succeeds at downloading new software, the message is updated in the “Message List” of the “Information” menu.
- The software update will not be carried out if there is no new software available at the specified download time.

Information

### Receiver Report

Display reports regarding failures and changes for timer settings.

## Reset

If complex adjustments are made so that the settings cannot be restored to normal, you can reset the settings to the factory preset values.

Setup

### Reset

**1** Press ◀/▶ to select “Yes”, and then press **OK**.
- “Now, TV will restart automatically. OK?” displays on the screen.

**2** Press ◀/▶ to select “Yes”, and then press **OK**.
- “Now initialising...” displays on the screen and blinks.
- After the reset has completed, the power shuts off and then comes back on. The screen will have returned to its original settings.

## Identification

Setup

### Identification

You can check the TV ID on the screen for reporting to customer service.

## CLEARING THE PASSWORD

**1** Go to MENU > Setup.

**2** Press ▲/▼ to select “Auto Installation”, “Programme Setup”, “Child Lock”, “Reset”, and the PIN input screen displays.

– – – –

**3** Press and hold both **CH** ∧ and **VOL** + on the TV simultaneously until the message appears on the screen.

## Specifications

| Item | | | 42″ LCD COLOUR TV, Model: LC-42XL2E, LC-42XL2S | 46″ LCD COLOUR TV, Model: LC-46XL2E, LC-46XL2S | 52″ LCD COLOUR TV, Model: LC-52XL2E, LC-52XL2S |
|---|---|---|---|---|---|
| LCD panel | | | 42″ Advanced Super View & BLACK TFT LCD | 46″ Advanced Super View & BLACK TFT LCD | 52″ Advanced Super View & BLACK TFT LCD |
| Number of dots | | | 6,220,800 dots (1920 × 1080 × 3 dots) | | |
| Video Colour System | | | PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60 | | |
| TV Function | TV-Standard | Analogue | CCIR (B/G, I, D/K, L/L') | | |
| | | Digital | DVB-T (2K/8K OFDM) | | |
| | Receiving Channel | VHF/UHF | E2–E69ch, F2–F10ch, I21–I69ch, IR A–IR Jch (Digital: E5-E69ch) | | |
| | | CATV | Hyper-band, S1–S41ch | | |
| | TV-Tuning System | | Auto Preset 999 ch, Auto Label, Auto Sort | | |
| | STEREO/BILINGUAL | | NICAM/A2 | | |
| Brightness | | | 450 cd/m$^2$ | | |
| Backlight life | | | 60,000 hours (at Backlight Standard position) | | |
| Viewing angles | | | H : 176° V : 176° | | |
| Audio amplifier | | | 15W × 2 | | |
| Speaker | | | (100 mm × 40 mm) × 4 | | |
| Terminals | Antenna | | UHF/VHF 75 Ω Din type (Analogue & Digital) | | |
| | RS-232C | | D-Sub 9 pin male connector | | |
| | EXT 1 | | SCART (AV input, Y/C input, RGB input, TV output) | | |
| | EXT 2 | | SCART (AV input/monitor output, Y/C input, AV Link, RGB input) | | |
| | EXT 3 | | S-VIDEO (Y/C input), RCA pin (AV input) | | |
| | EXT 4 | | HDMI | | |
| | EXT 5 | | HDMI | | |
| | EXT 6 | | HDMI, Ø 3.5 mm jack | | |
| | EXT 7 | | 15 pin mini D-sub, Ø 3.5 mm jack | | |
| | EXT 8 | | COMPONENT IN: Y/Pb(Cb)/Pr(Cr), RCA pin (L/R) | | |
| | DIGITAL AUDIO OUTPUT | | Optical SPDIF Digital audio output | | |
| | C. I. (Common Interface) | | EN50221, R206001 | | |
| | OUTPUT | | RCA pin (Audio) | | |
| | Headphones | | Ø 3.5mm jack (Audio output) | | |
| OSD language | | | Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Russian, Slovak, Slovene, Spanish, Swedish, Turkish | | |
| Power Requirement | | | AC 220–240 V, 50 Hz | | |
| Power Consumption | | | 222W (0.5 W Standby) (Method IEC60107) | 253W (0.5 W Standby) (Method IEC60107) | 280W (0.5 W Standby) (Method IEC60107) |
| Weight | | | 22.5 kg (Without stand), 27.0 kg (With stand) | 25.5 kg (Without stand), 30.5 kg (With stand) | 29.0 kg (Without stand), 34.0 kg (With stand) |
| Operating temperature | | | 0°C to +40°C | | |

- As a part of policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

**NOTE**

- Refer to the inside back cover for dimensional drawings.

## Optional accessory

The listed optional accessories are available for the LCD colour TVs. Please purchase them at your nearest shop.

- Additional optional accessories may be available in the near future. When purchasing, please read the newest catalogue for compatibility and check the availability.

| No. | Part name | Part number |
|---|---|---|
| 1 | Wall mount bracket | AN-52AG4 |

Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

### A. Information on Disposal for Users (private households)

#### 1. In the European Union

Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.
Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.
*) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

#### 2. In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

### B. Information on Disposal for Business Users

#### 1. In the European Union

If the product is used for business purposes and you want to discard it:

Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain: Please contact the established collection system or your local authority for take-back of your used products.

#### 2. In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

## Rating table for Child Lock

| Broadcasted rating / User-adjusted rating | AGE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Universal viewing | ✔ | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Parental approval pref. | ✔ | ✔ | ✔ | ✔ | ✔ | – | – | – | – | – | – | – | – | – | – |
| X-rated | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |

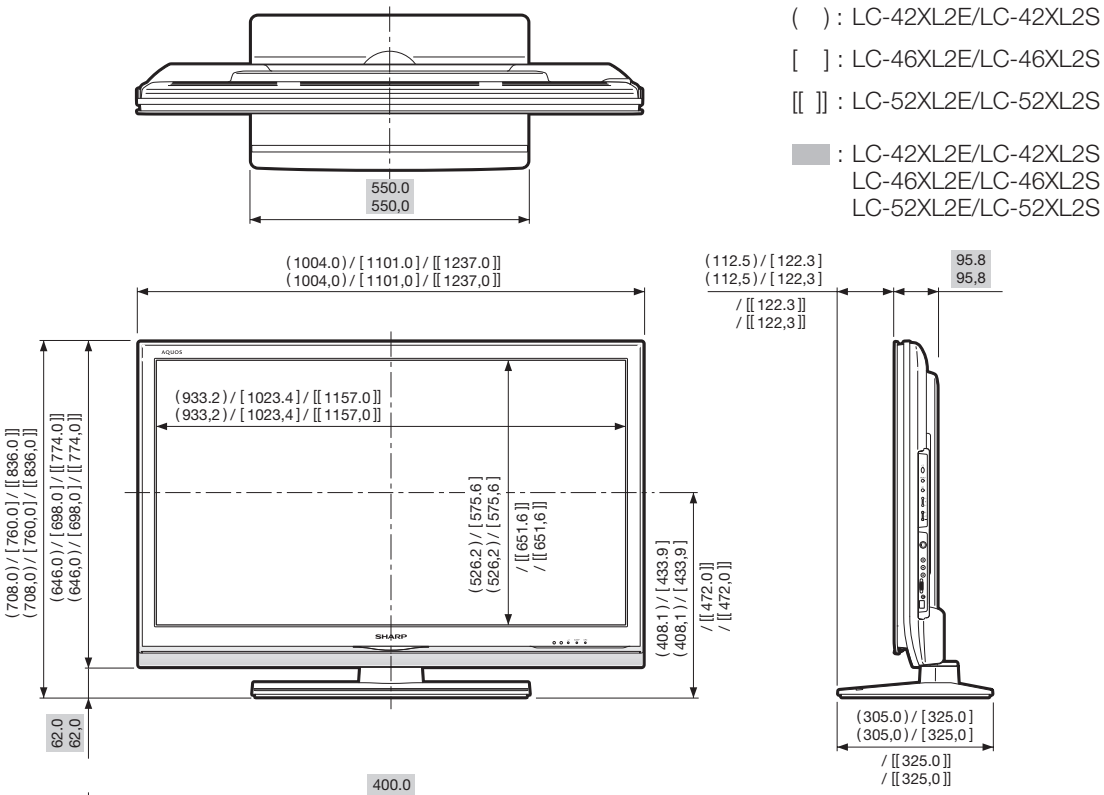
| Broadcasted rating / User-adjusted rating | Universal viewing | Parental approval pref. | X-rated |
|---|---|---|---|
| Universal viewing | – | – | – |
| Parental approval pref. | ✔ | – | – |
| X-rated | ✔ | ✔ | – |

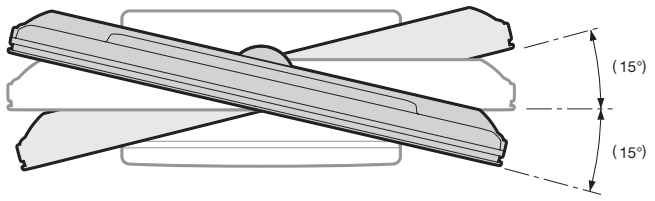
( ) : LC-42XL2E/LC-42XL2S

[ ] : LC-46XL2E/LC-46XL2S

[[ ]] : LC-52XL2E/LC-52XL2S

: LC-42XL2E/LC-42XL2S
LC-46XL2E/LC-46XL2S
LC-52XL2E/LC-52XL2S




:LC-42XL2E/LC-42XL2S

SHARP

SHARP ELECTRONICS (Europe) GmbH
Sonninstraße 3, D-20097 Hamburg

SHARP CORPORATION

Printed on environmentally friendly paper
Auf ökologischem Papier gedruckt
Imprimé sur papier écologique
Stampato su carta ecologica
Afgedrukt op ecologisch papier
Impreso en papel ecológico

ECF

Printed in Poland
Gedruckt in Polen
Imprimé en Pologne
Stampato in Polonia
Gedrukt in Polen
Impreso en Polonia

PIN

TINS-D177WJN1
07P08-PL-NG